

mhd

Communication and Research Utilization

- 1 Research on Child Rearing as a Basis for Practice
by Marian Radke Yarrow
- 7 Knowledge Production and Utilization in Curriculum: A Special Case of the General Phenomenon
by Edmund C. Short
- 16 The Decline of Mass Media
by Richard Maisel
- 20 Physicians' Knowledge and Attitudes About Suicide
by Don A. Rockwell and William O'Brien
- 22 Effectiveness of Drug Education Programs for Secondary School Students
by Sue C. Weaver and Forest S. Tennant, Jr.
- 23 Systems for Technological Information Transfer
by William T. Knox
- 28 Management of Research and Development in Mental Health
by Dennis A. Romig
- 30 Bureaucracy in Research: A Study of Role Conflict of Scientists
by M. K. Badawy
- 35 Telepsychiatry: Psychiatric Consultation by Interactive Television
by Thomas F. Dwyer
- 40 Effect of Proximity on Anxiety and Communication in the Initial Psychiatric Interview
by Carol L. Lassen
- 42 An Evolutionary Analysis and Theoretical Account of the Discontinuous Nature of Human Language
by James E. Goggin
- 48 Social System Psychotherapy
by E. Mansell Pattison
- 54 The Actor's Identity Crises (Postanalytic Reflections of an Actress)
by Janice Rule
- 59 Problems and Methods in Psychoanalytic Research
by Norman Tabachnick

The *Mental Health Digest* is a monthly publication designed to reflect the whole spectrum of mental health and to present a broad sampling of scientific subject matter and professional points of view. It contains condensations of material selected from the current mental health literature. The condensations are published with the approval of the authors and publishers for use in the *Mental Health Digest* only. Readers interested in particular digests are urged to consult the journal or other source in which the material first appeared or to ask the authors for reprints.

Material contained in the *Digest* does not necessarily reflect the opinions, official policy, or position of the National Institute of Mental Health.

Editorial Advisory Board

Bertram S. Brown, M.D., Chairman

Harry P. Cain II, Ph.D.

Robert A. Cohen, M.D., Ph.D.

John C. Eberhart, Ph.D.

Thomas F. A. Plaut, Ph.D.

Luther D. Robinson, M.D.

Francis N. Waldrop, M.D.

Louis A. Wienckowski, Ph.D.

Editor: Lorraine Bouthilet, Ph.D.

Managing Editor: Vivian R. Isenstein

See Important Notice on Inside Back Cover

Research on Child Rearing as a Basis for Practice

Marian Radke Yarrow

There is no more significant scientific goal than to understand human development and, with such understanding, to come closer to the realization of human potentialities and well-being. Research in child rearing is this kind of endeavor. This paper examines how well the field has lived up to the objective, how able the field is to offer knowledge that can reliably be used in practice and policymaking, both to foster desired outcomes in child development and to prevent or ameliorate problems.

Background Perspective on the Field

The basic assumption on which the discipline proceeds is that the experiences of childhood have vital importance not only in shaping the present state of the child, but in influencing future behavior and personality. Although this position does not discount the role of constitutional and biological factors in behavior, it expresses tremendous faith in the influences of experience, and the role of learning and environmental factors. Much research attention has been given to children's experiences within the family, especially the mother-child relationship. More recently, however, psychological research has included other social institutions and influences to which children are exposed.

Historically, child-rearing research has rather lopsidedly emphasized harmful and undesirable rearing conditions and developmental wounds—maternal deprivation, family disorganization, parental overindulgence and hostility, and the child's cognitive deficits, learning disabilities, neuroses, aggression, and delinquency. There have been fewer efforts aimed at un-

derstanding enabling rearing conditions and valued human outcomes. What are the rearing supports for individual trust, creativity, happiness, humanitarianism, responsibility?

The data of child-rearing research are not easy to obtain, because most rearing takes place in the private domain of the family. Research has coped with this problem in several ways: It has relied on indirect evidence such as interviews; it has utilized circumstances such as crisis or pathology, in which there is diminished family privacy (families also are less private about infancy); a small number of families have opened limited aspects of their lives to direct research observations; and experimental designs have been used in which investigators have attempted to simulate in the laboratory specific aspects of rearing.

Because rearing and its effects take place over time—a generation or a decade—long-time or retrospective studies have been required. In part, animal studies in more manageable timespans have provided birth-to-adulthood data. No one method or approach is satisfactory for all child-rearing research. In combination, the various approaches have provided an impressive body of knowledge.

The relation between research and practical issues has been varied. Child-rearing research in the 1930's was in close touch with many of the social problems of that era. With limited and often unreliable evidence, efforts were made to apply what was known about children and rearing, sometimes with success but many times without. In the years following, however, the pendulum swung sharply

away from considerations of social relevance, and research on children followed closely the laboratory model of research on rats. During much of this time, the researcher was likely to feel that the base of reliable information was still too small to have much usefulness when interpreted in societal terms.

Now, again, the concerns of society are pressing hard. What is adequate help for children and families who have failed? What kinds of remedial experiences benefit the "culturally deprived"? Does the high rate of aggression, alienation, and turmoil of older children and youth have roots in the rearing institutions of society? In response to these pressures, child research has become increasingly visible outside academic halls. Increasingly it has moved to the areas of society's "hurts" and fears. This move has brought changes in working styles, methods of obtaining data, and broadened concepts and variables. The in-life settings of research have dramatized the need to extend formulations of rearing beyond intrafamilial variables. Contexts of parents' work, poverty and riches, ethnicity, and politics impinge closely on the family and are inseparable from rearing conditions. Society rears its children in many ways and forms outside the family. In the 1970's, because of important gains in knowledge concerning such basic psychological processes as learning, perception, and cognition, problems of child rearing can be addressed in research with greater understanding and relevance to issues of practice.

The accumulated research evidence concerning child development is reviewed in the following pages in terms of its relevance for practice.

The Early Experience Hypothesis

A pervasive hypothesis in both folklore and science holds that some of the basic characteristics of the individual's personality and potentialities are laid down in infancy and early childhood. One bit of evidence is that early rearing deficits (such as lack of mothering, neglect, mistreatment, institutionalization, stresses of many kinds) are found in the histories of disturbed adolescents and adults. Although this is significant, it does not establish the inevitability of later pathology, and it does not identify the processes by which early rearing influences development.

Naturalistic studies fill in some of the needed information. Examples are the followup studies of infants and young children whose families were wartime casualties and who were reared under varying nonmothered conditions. These studies show that later problems do not always follow early stresses. Given such ambiguities, there is need for research that will identify what makes for greater vulnerability.

Research on animals and direct observational studies of human infants contribute evidence. Experiments have shown that infant monkeys reared with their mothers and those deprived of normal mothering differed measurably in infancy and later in emotionalism, confidence, intellect, social relationships, and physiology. Adult inadequacy in mother-deprived monkeys included sexual inadequacy and the inability to mother a next generation with affection. These are powerful suggestions as to the validity of the early experience hypothesis, even if one preserves a healthy conservatism about extrapolations from infrahuman to human development.

Direct study of human infants offers more information. Investigators ask: What is the infant's equipment? To what kinds of stimuli is he sensitive? How do his sensitivities and abilities change? The modal type of study is experimental, involving control of limited segments of the infant's experience (e.g., contact and handling), giving stimulation or training, and measuring specific responses.

The many experimental studies add up to solid confirmation of young infants' receptivity, modifiability, and vulnerability. Infants' abilities to organize perceptual phenomena, to be conditioned, to discover and test out the surroundings, and to be socialized have been demonstrated. Almost immediately a strong degree of control by the rearing environment is in play. But not all kinds of presumably enriching stimuli, administered at any time, effect changes. And a probable corollary is that not all presumably harmful experiences adversely affect the infant. The developmental state of the organism appears to be critical.

Further evidence of infant-rearing influences comes from studies of naturally occurring maternal absence or separation. Hospitalization and institutionalization, when dehumanized, characteristically result in deteriorative responses, depression, and impairment. On the other hand, separations from mother, when the child's psychological needs of contact, stimulation, and attentive care are provided for, do not appear to affect behavior or development adversely. Other naturalistic studies demonstrate that the environment and behaviors of infants and toddlers can be enriched cognitively and affectively.

There is more than enough evidence to indicate the tremendous receptivities and vulnerabilities of very young children, enough to know that

experiences do affect immediate developments, and lay the foundations for later experiences. From existing evidence we are in a good position to make specific recommendations regarding early child care. We can recommend environments and experiences in keeping with the child's developing characteristics.

Environmental Determinants of Behavior

Investigating the environmental determinants of behavior involves formulating the questions relating to rearing influences in another way. How does learning take place? How does the child learn prohibitions? How does he become dependent, independent, aggressive? How does he learn the values and mores of society? How does he come to reject them? What are the rearing experiences that contribute to his attitudes about himself and his response to the needs of his fellows? How does he learn control of his impulses? What kinds of rearing facilitate cognitive and intellectual growth, creativity? And so on. All of us—parents, educators, politicians—want answers to these questions.

The research from the 1930's through the early 1950's that was directed to these questions dealt with rearing and child behavior as general traits or dispositions. Rearing was characterized in terms such as maternal warmth or love, permissiveness, parental power assertion, and methods of discipline. Children 3 to 6 years old were the usual subjects. An amalgam of psychoanalytic and learning theories provided the conceptual underpinnings. Advances made by this work were small. The reported relations between single rearing traits and child characteristics were weak and unreliable. Aggressive behavior in children, for example, was sometimes

related to parents' rewarding of aggressions, sometimes to parents' use of physical punishment. Simple rearing variables measured as general traits have little predictive power concerning child behavior.

But the fact that this kind of research did not provide hoped-for answers does not mean that there are no predictable relations between rearing and behavior. Rather it has become evident that a trait formulation, an interview method of assessing rearing, and a single-variable analysis do not provide an effective research approach. It is not one that efficiently isolates and extracts the effects of any one parental variable or can deal adequately with the joint or interactive effects of several variables on child behavior. These conclusions are important in relation to the messages, based on this early research, that have been sent to the public.

Disappointed in this research strategy, many investigators turned to laboratory research. By taking research out of the rearing setting, isolating a specific segment of behavior and manipulating it in the laboratory, directing detailed examination to the effects of immediate, specific environmental events on the child's responses investigators have been attempting to elucidate general principles of behavior. But a caveat is in order. This is a necessary step, but one that must be followed by a return to in-life rearing research before findings can confidently be applied.

Two directions of experimental research are particularly relevant to child rearing. One is the work based on reinforcement theory or operant conditioning analyses; the second concerns observational learning by children.

There is unquestionable experimental evidence of the powerful effect of

reinforcement procedures on many kinds of child behavior. Under controlled laboratory conditions, which are in some respects abstractions of the kinds of adult-child interactions composing rearing, adults have developed and changed child behaviors by regulating the giving and withholding of social reinforcements (affection, praise, attention). Children have been made more self-confident, less bullying, less fearful, more able to accept adult authority, less antisocial in behavior, more persistent.

Although reinforcement analyses identify significant processes determining behavior, there is much room for misinterpretation and misapplication. The procedures of reinforcement are themselves complicated; the results depend on the schedule, frequency, and spacing of reinforcement and on finding the right reinforcers for given children. Effectiveness also depends on the experience, history, and nature of the child (e.g., his cognitive development), and the nature of the adult giving the reinforcement. It is not a simple recipe that can be applied with guaranteed results. There is not a specific formula for regulating child behavior.

Although it is obvious that children imitate and copy, the processes involved in observational learning do not yield easily to understanding. Which of the potential models (parents, teachers, peers) surrounding the child are significant in his learning, and which of their behaviors are adopted? Which are ignored or rejected? From experimental work it is clear that learning from models occurs at all ages and that it begins very early. A great variety of behaviors can be acquired in this way: Seeing aggression can increase aggression; seeing punishment of aggression can inhibit aggression; seeing kindness,

generosity, cruelty—all can be increased by this process. Exposure does not automatically lead to learning. The adoption of observed behaviors is influenced by the consequences for the model and the child. Observed behaviors that become part of the child's behavior need not have been modeled by persons with whom the child associates; films, TV, and dramas are exceedingly effective. It remains for further research to analyze the input from the media.

Research on reinforcement and the influence of models is beginning to build solid bases for rearing principles. Laboratory work on these management techniques has unmistakably demonstrated the modifiability and vulnerability of older children.

The Totality of Rearing

Emphasis is shifting from single-variable studies to formulations that take into account the many sources of influence that make up rearing—even though present theories of development cannot handle adequately the interactions among behavior determinants. In the analyses of rearing presented here, adult management aspects of rearing have been stressed—as if the child were a passive recipient. But the child also acts on environments and on the adults. His characteristics, reactions, behavior, and awareness—all shape his environment. Future research and applications of research need to give greater attention to the reciprocal influences of the family on the child, and the child on his family's rearing behavior.

A second complexity involves the interaction of intrafamilial factors and social-cultural factors. The pressures for research utilization in a culturally diverse society have had the healthy effect of breaking down the exclusive reliance on the traditional

and individual family model of development. Developmental theories often do not deal with the most salient matters in the lives that children and parents share with each other. For example, a parent's neglect or hostility toward his child may stem not so much from a quirk in his own development of impulse control as from the weight of the intolerable and immediate pressures on him of poverty, social injustices, and dehumanized living. Under these circumstances, the child's defiance may be as much an expression of anxieties and frustrations growing out of these same social circumstances as a manifestation of adolescent resolution of childhood dependency. To attempt to interpret child upbringing, to advise on rearing practices, or to make rearing interventions within a family or society apart from social and cultural realities invites failure. Application of research findings must be made with great care being taken to ponder their meanings in the contexts in which they are to be put into practice.

The Meeting of Science and Society

There are reasons for concern about relations between scientists and consumers. Not infrequently the public and the scientist are at war or are at least distrustful of one another. The origins of difficulty lie on both sides.

Findings on the effects of child-rearing conditions are unstable on many issues. This is particularly the case when a specific treatment or variable is singled out for evaluation. The effects of a given condition on child behavior will differ as research subjects vary (preschool children or adolescents), social contexts differ (urban poverty or urban affluence), methods of data gathering vary (surveys or observations), and as social

times change (a fearful, anxious, unsettled climate, or a hopeful, prosperous one). Specific rearing events can have a weak impact on child behavior, a strong impact, or no impact at all, depending on the systems or contexts of which they are a part. There is no room for simplistic answers on child-rearing issues.

This tentative and qualified nature of knowledge places a responsibility on investigators to discuss carefully the qualifications and generalizability of their results. Consumers, on the other hand, are frustrated by less than absolute answers. Consumers have a responsibility to act within a framework of probabilities. They need education about science.

Research in developmental psychology has impressive quantities of hard research data, but this evidence exists in large part as discrete pieces of knowledge, in laboratory settings, on unique samples of subjects, and is addressed to conceptual questions, not the questions that are in the public mind. To harness these disparate pieces of understanding, to make them relevant to social problems and the bases of dependable, practical recommendations, the best skills and the most scholarly efforts of the scientific community are needed. Just as a good clinician—a delicate mix of scientist and artist—can succeed with his patient without all the facts being in, so, too, seasoned investigators with insightful practitioners can work out solutions together.

In quieter times, parents and educators seemed to be relatively clear about their rearing tasks and goals, about the conditions for which they

were training their children, about the accepted values by which they expected their children to live. These are hardly the rearing realities of today. The variety of major faultlines and changes in society—environmental and human crises, social upheavals, widespread devaluation of old values—cannot help but affect child rearing and children. Parents discover that the circumstances and psychology of their childhood often are not applicable to the present day, that many of the experiences that their children are encountering or will encounter have no close parallels in the parents' own upbringing, that they themselves are changing and less certain about many formerly settled issues regarding rearing. Further, child-rearing institutions have visibly altered from 25 years ago. Nonfamily rearing agents (group day care, mass media, schools) have entered the lives of more children earlier and for longer periods, while other traditional rearing agents are vanishing from the scene, at least in the small urban family. Older siblings, aunts and uncles, grandparents, and neighbors are no longer available as significant rearing agents, as aides, as buffers, as supports to parents, especially important in middle and later childhood and adolescence. Today's children are reared by more influences and by fewer significant persons. There seems to be not only more diffusion of rearing influences, but greater disharmony among the influences. The task has increased in complexity for scientist and consumer alike. But in the better rearing of children, there is a chance for an improved quality of life.

Condensed with permission from *Child Welfare*, 52(4):210-219, 1973. Copyright 1973 by the University of Chicago Press. Reprints of original article from Marian Radke Yarrow, Ph.D., Chief, Section on Developmental Psychology, Laboratory of Socio-environmental Studies, National Institute of Mental Health, Bethesda, Md. 20014.

Knowledge Production and Utilization in Curriculum: A Special Case of the General Phenomenon

Edmund C. Short

The development of a new realm of inquiry inevitably attracts the attention of researchers. One increasingly visible field of research may be noted in the appearance of studies on "knowledge production and utilization." This new field examines two phenomena—knowledge production and knowledge utilization—and their relationships to one another. Together they define a special domain of problems with unique research potential. These problems arise whenever there is an attempt to resolve issues in any field of practical activity by drawing upon available knowledge. The effort to utilize appropriate knowledge depends upon having the required knowledge at hand. This knowledge may or may not be readily accessible to the user and at times may not yet have been generated. The process of knowledge production functions more or less continuously and often independently of user requirements. Thus the knowledge produced may be inappropriate or inadequate for the purposes of some users. Ultimately, the resolution of practical issues depends upon improved coordination between the process of knowledge production and the process of knowledge utilization.

The Relation of Research to Practice

The use of research to improve practice is frequently taken for granted without adequate knowledge of the actual relationship under which research can contribute to the improvement of practice.

Long before researchers could admit the limited role that research plays in developing solutions to prac-

tical problems, practitioners were resisting exhortations by researchers to make more use of research findings. Study of this reluctance, and subsequently of ways to increase acceptance of research, has led to the identification of psychosocial factors that affect acceptance or rejection of knowledge and innovation. Unrealistic expectations of the contribution that research can make to practice may also account for some of the gap between researcher and practitioner. Other reasons for the apparent failure of research to produce practical payoff are: A communication barrier that results from lack of interest in the same matters; a lack of appropriate indicators of the usefulness of research products; or a lack of appropriate translation and adaptation into technological developments suited to the practitioner's problems.

Studies of these human and structural aspects of the research-into-practice problem do not extend, however, to a more fundamental question of how new knowledge becomes exchanged for old, superseded knowledge. This altering of conceptions is a phenomenon at work in both practitioner and scientist. In the case of the researcher immersed in a given field of study and equipped with tools for validation of knowledge, the acceptance of new paradigms may come almost immediately upon recognizing the validity of work done by himself or his fellow researchers. A similar change in paradigms by a practitioner is certain to be slower since he is not an expert in the data of field or in knowledge verification. Perhaps more

regrettable is the frequent acceptance by practitioners of completely unfounded conceptions derived outside legitimate search for knowledge.

If practitioners have something to learn about the derivation of knowledge and its claim to truth, researchers, too, have need for a better understanding of the requirements for knowledge in the context of practice. Part of the frustration felt by some researchers over the lack of use of their research findings stems from their failure to see how the knowledge needed by the practitioner may differ radically from that which the researcher has provided.

The kind of knowledge most useful to the specialist or the professional is that which may be used "applicatively"—that is, to solve problems not previously confronted. Other uses of knowledge—the associative, the replicative, and the interpretive—may function at times as well, but it is the drawing upon valid principles from a wide range of sources that is required in order to formulate solutions to problems of practice.

Knowledge most appropriate to the circumstances of practice appears to be derived at least in part from the body of practical experience within the particular area of practice. John Dewey provided an example of the difference between the principles or theories of a formal discipline (in this case, the psychology of learning) and practice theory necessary to guide learning. The latter, he asserted, cannot be derived fully nor directly from the former.

A New View of the Problem

The relationship of research to practice is not a one-to-one relationship; rather it appears to be a process involving a series of complexly interrelated steps, still only partially under-

stood. Rather than continuing to investigate certain of these steps, looking for the key to the entire process, a number of researchers have redefined the scope of the phenomena and have conceived it, not as a problem of "research-into-practice," but as one of "knowledge production and utilization."

Studies of knowledge production and utilization (KP&U) differ from those on the relationship of research to practice by being less concerned with the pragmatic impact of research on practice and by emphasizing more the dynamics of KP&U as a recurring process. The search is for a better understanding of the process rather than merely trying to find out how to increase the amount of research going into practice. This approach recognizes the centrality of knowledge in the process. Both the production and utilization of knowledge are given appropriate attention in the total process. The commodity dealt with in both aspects of the process is the same one—knowledge. KP&U, as a frame of reference for research, appears to be more accessible to the disciplined tools of inquiry than was the earlier approach. Work done within a KP&U frame of reference seems also more easily relatable, one piece to the other, when one attempts to synthesize what is known about KP&U and to draw some implications therefrom. Finally, it is possible to specialize in the study of KP&U by breaking down the phenomenon further into natural divisions—knowledge production and knowledge utilization—and then putting the results of both branches of scholarship back together again.

Only a few studies that examine KP&U as a whole have been reported. They come from a variety of fields—the military, vocational rehabilitation, educational change, eco-

nomics, etc. In one study in applied economics, "knowledge" is treated as a commodity of economic value, produced and used as other, more tangible products. Research on KP&U has been able to draw on a continuing series of studies in the area of planned change and innovation for clues to its dimensions and dynamics as a process. Another thrust has come in studies of the utility of basic scientific and applied research in the development of weapons systems for the military.

It has been said that knowledge derived from basic research tends to be too general to lead to the solution of specific problems; such solutions must be sought in the context of specific problem areas. Any of these problems requires a complex solution that integrates a variety of earlier developments and solutions to component problems. A new middleman role will very likely be needed to develop new solutions related to the problems and based on basic scientific research and other pertinent data. The dissemination of solutions and their acceptance into practice are likewise crucial to KP&U.

The Nature of Knowledge Production

A wide variety of questions and research methods have been applied to the study of knowledge production. Within this domain, attention has been directed to phenomena such as quantity and quality of scientific productivity, factors affecting the level of this productivity, canons and methods of inquiry, kinds of knowledge generated, policy questions of who should produce knowledge and under what institutional forms and organizations. An adequate understanding of the process of knowledge production depends upon obtaining and synthesizing the results of studies of these and other related areas. Only

a partial view is currently possible since research on knowledge production is still in an early stage.

Determiners of social policy have the task of assessing the need for increased knowledge productivity. The extent of the need for an increased knowledge productivity, however, is easier to assert than to support with evidence. Any reputable model of social policymaking calls for relevant data to be sought and assessed as objectively as possible. What is needed in this instance, among other data, are status studies of the amount, kind, and rate of growth of knowledge, as it currently occurs, on which actual needs and priorities for research support might be based.

Studies of growth in knowledge production reveal only the grossest of estimates. How much knowledge is produced, and how and why rates of production change are questions yet to be investigated with sufficient precision to obtain an overall picture. Historical studies of this kind require the integration of sociological, political, psychological, philosophical, technical, and evaluative research; future knowledge production appears to be equally difficult to predict. Despite research difficulties, having such data on knowledge productivity is essential for assessing and correcting any imbalance among various kinds of knowledge growth.

More study has been devoted to factors affecting the quality of knowledge production than has been given to the general level of productivity. Both the social organization of knowledge producers and the effect of various characteristics of such organization upon productivity have been studied by sociologists of science. Social controls exercised within the group over its members are numerous and varied, the chief purposes of these

being to vest power in the colleague group and to provide intellectual consensus as to acceptability of knowledge produced.

Mechanisms internal to scientific organizations that are used to affect productivity of member scientists include maintaining intellectual and value norms for scientific work, conferring of status and access to intrarational communication networks, and advancement to more favorable positions and offices within research structures.

Certain kinds of knowledge production have been granted low prestige value, and these types receive less rewarding reinforcement through assignment to less desirable research structures. This circumstance results both from internally set priorities and from pressures from outside the research community for knowledge production in certain areas thought to be socially critical. Public research funds are awarded in a manner that gives certain knowledge production activities high prestige and adequate supporting facilities but which provide little of either to those with low priority. At times what public agencies think should be given priority and what those engaged in the production of knowledge judge to be critical are clearly at odds. The social values that dominate the allocation of research funds clearly have an effect upon productivity and its quality.

The specific social values which dominate this kind of patronage and those values arising from expert assessment of the current knowledge situation have yet to be examined for the degree of disparity that exists between the two.

Kinds of Knowledge Produced

Another direction taken in the study of knowledge production has

been to differentiate the kinds of knowledge produced. In some fields, there may be rather clear-cut chains of research aimed at producing and verifying specific kinds of knowledge, as in the case of the more mature sciences. In the less well-structured fields, several conflicting or overlapping areas of research effort may be found functioning simultaneously. This is perhaps a necessity, given the state of such fields, but these circumstances tend to minimize productivity in the sense that only a portion of the work clearly generates structured knowledge powerful enough to yield further research possibilities.

One approach used in classifying knowledge is to identify the kinds of knowledge commonly associated with the work of those who are engaged in various aspects of the production of knowledge. Such people tend to perform quite different types of knowledge production depending upon the role they assume. Knowledge produced by them is not all of the same order. Differences in the form and kind of knowledge associated with each role are clearly recognizable when such data are examined.

The research scientist functions differently in each of 10 systems in which he may generate some knowledge: his culture, his political system, the legal/economic system, a formal information system (libraries, journals), his professional membership group, his formal work organization, his reference (shared research speciality) group, his preferred colleague group (invisible college), his immediate work associates, and his own head (personal cognitive structure). The types of knowledge produced in each role are obviously different.

Another more systematic approach to classification of knowledge is one taken by the science of zetetics. Zetetic-

ics is concerned with collecting and systematizing data on the activity of research and artistic creation and with classifying and relating all knowledge into a consistent system. The science of zetetics focuses on the varieties and forms of knowledge that have been produced. It views knowledge comprehensively, not just from within a selected context or research area.

The significance of the zetetic system of knowledge for understanding the category or range of knowledge within which one conducts his research lies in the clarification it may yield of the kind of knowledge being sought. A knowledge producer may have certain questions to investigate, certain methods of research that can be applied, but if the nature of the knowledge he seeks to generate is not clear to him, it may be most difficult to theorize about or to formulate in terms that communicate.

Role-Related Productivity

What was once thought to be one role—the researcher, producing one type of knowledge—has come to be recognized as a series of differentiated roles, each contributing a different type of product. A comprehensive attempt has not been made to classify knowledge produced in connection with these roles, in order to determine, for example, where gaps exist or where role proliferation has resulted in duplication of effort. One new role—collation, integration, and interpretation—is defined as the relating and generalizing of findings of a large number of specific basic or applied research studies. A second new role—translator, developer, educational engineer, inventor, or designer—is concerned with development activity: Identifying problems; arriving at a proposed solution; devel-

oping specific materials, procedures, or packages ready for use; and trying out the product.

Another emerging role is that of the knowledge linker, who facilitates the communication of knowledge produced. In the broadest sense, the primary function is to bridge the knowledge gap between researcher and practitioner. One who fills the role of knowledge linker may have the responsibility of retrieving basic or applied knowledge, deriving practical implications from it, and distributing it to people who need it and can use it.

There may be still other roles that could be identified. Even this brief exposition has indicated that these roles are not mutually exclusive, for they are abstractions from a variety of circumstances and are not meant to be related into a step-by-step scheme within a particular comprehensive plan for handling knowledge production in some field.

Knowledge Production Roles in Education

It is relatively easy to distinguish the work of the "researcher" who utilizes the tools of the basic disciplines to produce new knowledge of education. Individual studies related to historical, anthropological, philosophical, political, economic, sociological, or psychological inquiry provide ample illustration of this kind of research product.

The integrator or synthesizer in educational research produces knowledge which typically is found in the form of critical reviews or systematic inventories. Textbooks remain the major source of updated knowledge in the several aspects of education. These, however, are frequently not fully comprehensive syntheses of research findings since they tend to be prepared for instructional purposes

which have a practical, training aim, not one of setting forth the whole of knowledge on a given subject.

If knowledge production in education is extended to include research within education as a conjunctive domain, it would appear that the task is a matter of investigating variables in a problem situation, sorting out the relevance of appropriate knowledge from the disciplines, and drawing together and testing conceptualizations that accurately reflect or make intelligible a piece of the problem or the problem as a whole. The research done within this frame of reference has characteristically fallen into subdomains, such as "nature and aims of education," "curriculum design and validation," "organization and policy," and "teaching-learning" research. Some researchers in this conjunctive domain may prefer more numerous subdivisions than these in order that their work within a given problem area may be focused even more narrowly. There is no single system for dividing up educational problems, and anyone apparently can create a new domain of problems to research any time he detects a need for one.

When knowledge resulting from the work of educational developers is examined, at least two forms of knowledge may be distinguished: general technological knowledge and particular technological products. Technologies in education may relate to things such as buildings, equipment, etc., but most technologies in education are related to people and involve acts, plans, arrangements of persons and experiences, etc. Technology establishes a new operational principle serving some acknowledged advantage, and each body of technological knowledge pertains, therefore, to certain specific problems and outcomes.

A particular technological product, therefore, is designed to control action insofar as pertinent technological knowledge will permit. Sound technological products, however, cannot be expected to attain the desired results without the experience of a skilled expert in carrying out the prescribed action.

Since the variety of knowledge linkage roles is great, the types of knowledge produced by persons engaged in these roles differ considerably from role to role. In those linkage roles more nearly associated with knowledge production than with knowledge utilization, the chief characteristic they appear to have in common is that of dissemination. If the role of knowledge linker is to be differentiated so that all types of knowledge do not have to be disseminated by the same linker or linkage institution, then some basic data must be obtained and analyzed about the dissemination process in education and the effects of handling different types of knowledge by various means. A great deal is already known about how to establish linkages for improved information transfer in education, but the types of knowledge to be transferred are seldom the focus of study or deliberation. Regardless of the system designed to facilitate knowledge linkage between a source and a user, the knowledge broker must know the kinds of knowledge available at the source as well as how to retrieve it and communicate it. A knowledge broker seldom passes information on in the same form he got it, but he must possess it before he can relate it to a user in an appropriate form.

Methods of Inquiry

As educational researchers discover that several different kinds of knowledge may be generated, they are com-

pelled to recognize the need for research methods appropriate to each of these varied types of research. The problem is to know what the various methods of inquiry are, for what purpose any one of them may be used, and how to execute them. Within the educational research community, it is quite possible that the expertise necessary to carry on disciplined inquiry in education is in short supply and that stepped up preparation in research arts will need to be undertaken if much advancement is to be made. It is clear that in relation to knowledge of available methods of disciplined inquiry that can be applied to research in education and in curriculum, there has been a distinct gap between the extensive resources of specialized knowledge on the subject and what is commonly conveyed within education.

Conjunctive inquiry—As far as can be determined, those inquiry methods appropriate to structuring generalized knowledge of education as a conjunctive domain are not altogether distinctive. That is, there are no special methods of inquiry that have been developed to assist in making intelligible the phenomena which come in the raw state of experience as global or undifferentiated puzzles. Perhaps an examination of a large number of conjunctive studies can be undertaken in order to produce the needed formalized methods and canons of inquiry applicable to education as a multidisciplinary whole.

Technological inquiry—Methods of producing general technological knowledge are not widely reported in the research literature in education. Examination of more basic treatments of technological inquiry must be undertaken to obtain a clear picture of what is involved. Yet there is a need for more definitive treatments of methods of inquiry which are appro-

priate to the development of technological products from more generalized technological knowledge. Whether this process is governed by carefully established criteria and methods of procedure applicable more or less uniformly to all types of product development is not clear.

Production of practical knowledge—Practice theory has sometimes earned a reputation for being unscientific. It is important to recognize that ways of creating practice theory can be and should be subject to a method of inquiry just as sound as those methods of inquiry appropriate to discipline-oriented questions, to conjunctive-oriented questions, and to technological problems. Practice theory is essentially philosophical in nature, that is, about questions of value and judgment. It is at the same time, or should be, scientific and technological as well because intelligent practice requires knowledge of the nature of pertinent phenomena and of means of attaining certain results. Tied to goals deemed desirable, this knowledge can guide action. Practice theory, then, is made up of praxiological statements, or statements guiding action in specific situations.

Knowledge production in curriculum—Examination of knowledge production in curriculum permits only one broad conclusion—that we know remarkably little about it. The activity which can be identified as knowledge production in curriculum is little understood; it produces relatively little quality work; it is uncertain what it should be studying and what definitions it most profitably might adopt; the controversies over its key concepts and modes of inquiry fill more of the research literature than do solid reports of research accomplished; and it appears to be quite isolated from the mainstream of know-how about sound

techniques of inquiry. We know more about the difficulties encountered in the field than we do about the elements that constitute its structure. Within the last few years, however, new developments have begun to appear which may stimulate the refinement of the task and methods of knowledge production in curriculum and may direct inquiry toward the production of more and better curriculum knowledge.

The Nature of Knowledge Utilization

The fundamental impetus for studying the phenomenon of knowledge utilization is the well-known fact that the production of knowledge and the availability of it for use are not in themselves sufficient conditions to assure that knowledge will be utilized. What is actually involved in the process of utilizing knowledge has been the object of study by a number of recent researchers. Though full understanding of this phenomenon is not possible at this time, work has proceeded on several fronts: The creation of mechanisms for information transfer, forms of knowledge that are useful in specific circumstances, new conceptions of the utilization process, user response to dissemination activities, stages and steps in adopting new knowledge, and strategies for increasing knowledge utilization.

Access to Knowledge

One of the requirements for being able to utilize knowledge is that one must have access to it. The means of locating and retrieving knowledge appear to be an essential component of the process. Elaborate mechanisms have been created or proposed for this purpose, including the traditional processes of publishing and library services, special purpose resource centers, interlocking networks of communication through which material can

be traced, and computerized storage and retrieval systems.

The impact of these information transfer systems in education has yet to be adequately assessed from the point of view of how they affect knowledge utilization. There is no question but that recent advancements in these information networks have resulted in more and speedier access to research knowledge. Nevertheless, little is known about what factors operate to enhance the process or to restrain it.

Accessibility to knowledge is an important aspect of knowledge utilization, but so is the type and form of knowledge being utilized as well as the social and psychological processes involved. Librarians and other information scientists have studied user needs for specific types of knowledge and how intended use governs the optimum form and content of what is made available to users. It must be said that this aspect of knowledge utilization is in an early stage of investigation.

A Conceptualization of Knowledge Utilization

The approach to knowledge utilization as a science attempts to understand and relate all aspects of the phenomenon of knowledge utilization in its most general sense. This requires integrating many pieces of research, anecdote, case history, and theory on utilization that appear in a variety of fields of practice whose knowledge utilization dimension has been studied. Ultimately, a more developed, more general, more useful theory of utilization should emerge.

The understanding of knowledge utilization that has emerged centers around a knowledge transfer process, which is conceived as a commu-

nications or linkage process between a user and a resource and a knowledge flow system, which links several of these transfer processes between and among interdependent systems. Models of intrapsychic, interpersonal, social system, and inter-system knowledge utilization are depicted. The nature of different types of knowledge that are transmitted can be seen through these models, as can the nature of processing and packaging of the knowledge being transmitted.

Knowledge Utilization in Education and Curriculum

Several features of the educational system affect the use of research findings: Its vulnerability to pressures outside its control, the gap between occupational realities and professional aspirations of educators, the lack of clarity and focus of the terminal goals of education, and the formal governing and control mechanisms of the system.

Utilization of curriculum knowledge as a total natural process has so far escaped deliberate study by the research methods of the emerging science of knowledge utilization. The possibility exists, however, that approaches like those applied in studies of the more general phenomena could be applied to various questions related to curriculum knowledge utilization. Curriculum researchers perhaps need to become better acquainted with methods and findings associated with the study of knowledge utilization in general and

to begin launching investigations that will yield fuller understanding of the process in curriculum.

Knowledge about curriculum is a significant, perhaps indispensable, contribution to the array of information needed to make practical decisions on many aspects of educational programs. Not always, however, is curriculum knowledge sought out in recognition of its value in such circumstances. When it is, the storehouse of curriculum knowledge may, at times, seem void of that which is most needed. On the other hand, producers of such knowledge are often concerned that the knowledge they have generated is not utilized. Thus a classic situation occurs in which the knowledge production components of a given field of endeavor appear unsynchronized with the knowledge utilization components of that field, or vice versa.

This kind of problem may seldom be fully resolved, but an improved relationship between knowledge production and utilization of knowledge in curriculum, or in any other field, can be sought. Continued interaction between the knowledge that is emerging in the sciences of knowledge production and knowledge utilization in general and the knowledge that is accumulating concerning the phenomenon of curriculum KP&U will provide a number of fruitful avenues for the required research and development.

Note: This 64-page review has a 362-item bibliography.

Condensed with permission from the *Review of Educational Research*, 43(3):237-301, 1973. Copyright 1973 by the American Educational Research Association. Reprints of original article from Edmund C. Short, Ed.D., Division of Academic Curriculum and Instruction, College of Education, The Pennsylvania State University, University Park, Pa. 16802

The Decline of Mass Media

Richard Maisel

A new, three-stage theory of social change and media growth challenges many of the ideas long accepted in the study of modern communication systems. According to this theory, the third stage, now evident in the United States, is characterized by a declining growth rate for mass media and an increasing growth rate for specialized communication directed to smaller, more homogeneous audiences. If this theory is correct, the mass media will play a less important role in the future, and the focus of scientific attention should be shifted to specialized media.

The Two-Stage Theory

Most studies of modern communication systems are based on a two-stage theory of social change and media growth, which may be summarized as follows:

1. The history of Western civilization may be divided into two periods: a stable earlier period in which society was small in scale, local in orientation, and organized around a primitive, preindustrial economy; and a later period of industrialization, extending to the present, in which society has grown in size, scope, and technological prowess.

2. Each of these two periods is characterized by a communication system that is consistent with its needs and resources. In the preindustrial period, the communication system was restricted to direct face-to-face communication between individuals. In the later period, beginning in the mid-15th century with the invention of printing from movable type, a system of mass communi-

cation evolved.

3. There is a close, functional relationship between the process of industrialization and the growth of mass communication. The former stimulates and provides the resources necessary for the latter; the latter facilitates the growth of the former. Thus each stage in the growth of the mass media helps provide the conditions necessary for its further growth.

4. Both the mass media and the processes of industrialization that support it have been growing at a rapid rate and will continue to do so in the future.

5. Mass communication develops a powerful "hold" over its audience, thereby closing off potentially competitive forms of cultural experience. This gives the mass media an ever more secure position and an ever more paramount role in determining the cultural content of our society.

The Three-Stage Theory

The newer, three-stage theory of social change and media growth incorporates the older theory through step 3, supplanting the later steps with a third stage of development as follows:

4. When industrialization and the institutional changes that accompany it reach an advanced level, new forces channel social and economic development down a new path, culminating in the "postindustrial society."

5. Among the forces released at an advanced level of industrialization are increased specialization and the growth of the so-called service industries.

6. The point at which the third stage begins is usually marked by a rapid shift of the work force away from the manufacturing sector toward the service sector. In the United States, this shift occurred following World War II.

7. The service industries are great consumers of specialized media and call for specialized communication designed for homogeneous audiences.

Thus, the development of the third stage stimulates the growth of specialized media. Moreover, technological development and increase in wealth provide the means necessary for the development of these specialized media.

We may test the three-stage theory following World War II by examining the rates of media growth in the United States from 1950-1970, expecting to find an increase in growth rates for the specialized media relative to growth rates for the mass media.

Mass Media, Education, and Personal Message System

The education system is the most important of all specialized media systems and a mammoth medium for the communication of specialized information. The school system also supports the use of other specialized media, such as textbooks, technical treatises, and audiovisual materials. Equally important, the product of the education system is a stratum of individuals who, both in their work and private life, are consumers of specialized communication. Thus, a crucial test is provided by growth in the education system.

Economic growth for the mass media, education and personal message systems reveals the highest growth rate in the education system,

and the lowest growth rate in the mass media system. The growth rates for both the education and personal message systems are well above those for the gross national product (GNP), indicating that both of these systems expanded relative to the total economy. The growth rate for the mass media was approximately equal to that of the GNP in the 1950-60 period, but fell behind during the 1960-70 period. Thus, we must conclude that the mass media system is contracting relative to the economy as a whole.

Every media system is composed of new and expanding segments, as well as those that are stable or in decline. The critical element in the development of media systems is found in the growth segments. There was explosive growth for television during the 1950-55 period, but a steady decline in its expansion thereafter. In contrast, the growth rate for higher education was low in the 1950-55 period, but rose sharply in subsequent periods. By the 1955-60 period, the growth rate for higher education had surpassed that of television, and continued to do so throughout the 1960's. The growth rate for the telephone was moderately high compared with the other two media under consideration, and stable throughout the postwar period. In the 1965-70 period, it surpassed the sagging growth rate for television. Thus, in the 1950-70 period, growth rates for the fastest growing segments of the education and personal message systems have increased relative to the analogous component of the mass media system. By 1970, television, which is usually considered the most successful of the mass media, did not have an expanding position in the economy.

Each medium may also be divided into more or less specialized segments. Higher education tends to be a more specialized medium, while elementary school tends to be a mass medium. Thus we can test the three-stage theory by examining the growth rates for each medium divided into segments along degree-of-specialization lines. In the case of the school system, growth rates in the 1960-1970 period vary directly with the degree of specialization of the individual segment. The same tendencies are seen in the growth rates for education and special service broadcasting—they have been increasing relative to those of commercial broadcasting. In the 1960-70 period, the quantity of air and first-class mail delivered increased faster than second-, third-, and fourth-class mail (excluding publications), and the purchase rate of tape recorders exceeded that of phonographs.

Therefore, every comparison among the education, personal message, and mass media systems shows that the first two media are growing at increasingly more rapid rates than the third.

Specialization of the Mass Media

It has been suggested that the mass media themselves are becoming more specialized, a proposition deduced from the three-stage theory. We can test this proposition by examining the growth rates of the more specialized and less specialized components of each mass medium, distinguishing between the national broadcasting networks and local radio and television stations; the former have larger and more heterogeneous audiences and thereby constitute the less specialized segment of the broadcasting media.

Within all three of the major media—radio, newspapers, and magazines—from 1950 to 1970 there has been greater growth in advertising revenue directed to more specialized audiences. This finding strongly supports the three-stage theory in two ways: by showing differential growth in the media carrying the advertising, and by *directly* showing differential growth in the medium of advertising, itself a means of communication. In order to obtain further support, the growth of a more specialized type of advertising means the medium must attract the type of audience to which a more specialized advertising is directed. Thus, specialized advertising becomes a factor in the medium's continued specialization.

The trend toward specialization in magazines and radio is usually explained as a consequence of television. But it does not explain the fact that the growth rate of local television advertising has been increasing relative to the growth rate for network television advertising. The three-stage theory accounts not only for shifts among media, but for shifts within a particular medium.

Data for 1950-70 reveal that the growth rate of consumer economic support for various media is directly related to the degree to which each medium is specialized. Within the print medium, the growth rate for books has been higher than for magazines and newspapers, which are less specialized, and the rate of increase in expenditures for legitimate theater has been greater than the rate of increase in expenditures for motion pictures, which again are less specialized. The rate of increase in consumer expenditures for radio, television, magazines, newspapers, and motion pictures has been far less than

the rate of increase in consumer expenditures as a whole, which in turn has been less than the rate of increase in books and legitimate theater. This further confirms that, relative to the total economy, specialized media are expanding and mass media are contracting.

Growth rates from 1947-70 for various segments within the printed medium reveal that in every case growth of the more specialized segment of the medium exceeds that of the less specialized: The growth rate in the circulation of suburban newspapers is greater than the growth rate in the circulation of central city newspapers; the growth rate in the number of technical books sold and the number of new technical books published is greater than the growth rate in the number of fiction books sold and the number of new fiction books published; the growth rate in the number of bimonthly and quarterly magazines is greater than the growth rate in the number of weekly and monthly magazines.

The same trend toward specialization can be seen in the theater, where the number of off-Broadway performances increased from 1960-70, while the growth rate for the less specialized Broadway performance was down.

Trends in media growth in the United States during the 1950-70 period supports the three-stage theory of social change and media growth. It is clear that the focus of attention in the study of modern communication systems should broaden from its present preoccupation with the mass media to a full examination of all major media and

communication systems. This would include studies of important media systems that have been almost completely neglected, such as the telephone system; studies of new media that are growing rapidly, such as the office communication system; and studies that provide perspectives on our total communication system.

We must begin to think of, and study, the individual in our society as a communicator having access to a very powerful set of media tools and as a recipient of a wide range of equally enriched communications directed to him by others. This would lead us to study how he learns about and uses the available media systems, and the effect that this ability to communicate has on him.

We should not make the error of projecting the third stage into the future. At least two possibilities exist: First, the explosive increase in the volume of communication directed to the individual creates the problem of dealing with it. Thus we might expect the coming period to be characterized by the growth of receptors, media for receiving communications—developments already apparent in the use of speed reading, computers for data retrieval, tape recorders, and copying equipment. Second, the growth of a differentiated communication system is part of the larger process by which our society has been producing a differentiated culture. In both economic and psychological terms, the cost of differentiated culture has been increasing, and it is not clear whether our society will pay the price of supporting it in the future.

Condensed with permission from *The Public Opinion Quarterly*, 37(2):159-170, 1973. Copyright 1973 by Columbia University Press. Reprints of original article from Richard Maisel, Ph.D., Director of Graduate Studies, Department of Sociology, New York University, Washington Square, New York, N.Y. 10003

Physicians' Knowledge and Attitudes About Suicide

Don A. Rockwell and William O'Brien

The physician serves on the front line of defense in the prevention of suicide. Some 75 percent of all suicides have consulted a physician before their act and from 60 to 74 percent of suicide attempters had been treated recently by a physician. Perhaps as many as 10 percent see their physician on the day of or just prior to their suicide. That suggests that we could avert or delay as many as 14,000 stigmatizing deaths each year. It also is relevant that physicians themselves are at considerable risk of suicide.

There are many reasons why suicide potential in patients, colleagues, and self is overlooked: Suicide is a taboo topic that most people tend to avoid; suicide arouses anxiety in physicians; physicians may not possess the requisite skills to deal with the suicidal patient; most physicians have not had training in the recognition of the suicidal patient. In the course of examining a variety of aspects of this issue, one question we posed was "has education in this area failed?" and we sought the answer from practicing physicians. Ninety-five physicians were sent a questionnaire on suicide information and attitudes. A return rate of 58.9 percent was obtained without followup.

Knowledge About Suicide

Of the sample, 86 percent indicated an awareness that a prior attempt increased the risk of a subsequent attempt. Seventy-nine percent recognized that children less than 10 years of age may commit suicide, and a similar percentage indicated an awareness that the rate

for urban blacks was rapidly approaching that of whites. Only 14 percent thought that suicide occurs only among the mentally ill. This indicates an awareness of research in suicidology that was surprisingly up to date.

Although 50 percent correctly recognized that women attempt suicide three times as often as men, necessarily, 50 percent did not recognize this. At least 24,000 people committed suicide in the United States in 1971. Of the physicians, 35 percent estimated that less than 20,000 people committed suicide last year, and 5 percent estimated that less than 10,000 committed suicide. Interestingly, these physicians did recognize that many suicides are not recorded as such. Since these doctors are involved in certifying causes of death, their appraisals of the degree of underreporting is interesting. Sixty-two percent believed that only half of the suicides are reported as such. An additional 27 percent estimated that only one-quarter of the suicides are recorded as such. This corresponds reasonably well with suicidologists' estimates of the degree of underreporting.

Most of the physicians recognized the risk of their own or their colleagues' suicide. Seventy-nine percent estimated the risk of physician suicide to be two or three times that of the general population. This agrees with the data.

Most troublesome with respect to areas of ignorance is the finding that only 14 percent correctly identified the most vulnerable age group, people more than 60 years old, in terms of "successful suicide." In view of the earlier degree of sophistication

evidenced by the physicians' knowledge, we are hard pressed to explain this. Although the question referred specifically to "successful suicide," these doctors may have been thinking of suicide attempts or suicidal behaviors. Even then our findings are inexplicable since attempts decrease markedly after 30 years of age.

The final finding was also intriguing. Seventy-three percent thought that the most popular method of suicide was "drugs." Only 18 percent knew that firearms are the most widely used single method. This misperception has both advantages and drawbacks. It is useful for the physician to be aware and sensitive to the risk of suicide by drugs, since he may be the potential unwitting ally of the suicidal individual. On the other hand, the physicians' lack of awareness of the dangers of firearms means an impediment in using a preventive approach. Access to guns is certainly one question to be asked of all suicidal and homicidal patients.

Source of Knowledge About Suicide

We were interested in knowing where these physicians had learned about suicide. Forty-eight percent reported never having had a class or course on suicide. Twenty-five percent could recall a class in medical school, 11 percent had attended seminars, and 11 percent had gotten their information "elsewhere." Only 4 percent had any education about suicide in residency training. These physicians thought that adequate or good sources of information were

health professionals, suicide prevention centers, and journals or books. Parents, religious teaching, television, or movies were reported as poor sources of information. Medical schools were seen as adequate or good by 45 percent, and poor by 55 percent. While suicide prevention centers ranked highest in terms of sources of information, they ranked near the bottom in terms of influencing attitudes toward suicidal people.

Attitudes About Suicide

Attitudes toward suicidal behaviors are crucial in terms of prevention. We asked how comfortable these physicians would be in speaking about suicide to peers, parents or guardians, and patients. Twenty-seven percent indicated they would feel uncomfortable talking with patients about suicide. Only 54 percent would accept into their practices without hesitancy someone who had attempted suicide. Twenty-one percent would be hesitant but probably would, 7 percent probably would not, 4 percent would not, and five percent would "if they knew the patient." Three gave no response.

The combination of inadequate information coupled with negative attitudes might lead one to take a pessimistic view of the physician as frontline defender in the prevention of suicide. However, only five believed their knowledge of suicide was sufficient, and 58 percent indicated a serious interest in "attending a series of discussion groups of suicide." Fully 70 percent would be interested in exploring the issue of suicide further "at their convenience."

Condensed with permission from the *Journal of the American Medical Association*, 225(11):1347-1349, 1973. Copyright 1973 by the American Medical Association. Reprints of original article from Don A. Rockwell, M.D., Department of Psychiatry, University of California School of Medicine, Davis, Calif. 95616

Effectiveness of Drug Education Programs for Secondary School Students

Sue C. Weaver and Forest S. Tennant, Jr.

In order to determine whether intensive drug education can reduce or prevent drug abuse in secondary schools, a 1-year study of eighth graders was conducted. Two groups of eighth-grade students received drug information during the 1969 school year at school assemblies where they listened to a panel of a physician, pharmacist, and lawyer, and by watching drug education films.

The experimental group was given an additional 3-week drug education course taught by specially trained physical education teachers. The program utilized programmed texts, films, case studies, and role-playing by students to generate enthusiasm, decisionmaking, involvement, and sensitivity to human problems. The program cost \$4 per student. Parents attended one special session to discuss drug issues and to ask questions.

Two anonymous questionnaires were administered to both groups: A test to assess the students' knowledge about the implications of drug abuse, and 18 questions about the prevalence of drug use, whether the education program had influenced drug taking, and the students' preference for drug curricula in education. Nine months later the same questionnaires were again anonymously administered. The purpose was to determine the students' retention of drug knowledge and whether the intensive program had influenced drug use.

Sixty-eight percent of the respond-

ents in the experimental group and 91 percent in the control group felt that they should have been given additional drug information when they reached high school. Fifty-five percent of the experimental group and 80 percent of the control group requested all-school assembly programs with guest speakers and films.

Despite a demonstration of superior drug knowledge, 12.5 percent in the experimental group considered themselves to be experimental or casual drug users, while only 4.1 percent in the control group did. Four and one-half percent of the experimental group and 2.5 percent of the control group indicated they used drugs five or more times a week.

About 5 percent in the experimental group and 2.5 percent in the control group stated they stopped drug experimentation due to information received from their respective drug programs. In both groups 41 percent felt the school program had helped them convince peers not to use drugs.

After 9 months, the experimental group showed a reduction in their knowledge of drugs. Assessment of the prevalence of drug use in the experimental group at this time indicated an increase in experimental and casual drug use, but not in regular use. Regular drug usage of more than five times a week did not change significantly.

It could not be demonstrated that the program reduced drug use or prevented experimentation with drugs.

Condensed with permission from the *American Journal of Psychiatry*, 130 (7):812-814, 1973. Copyright 1973 by the American Psychiatric Association. Reprints of original article from Sue C. Weaver, Ed.D., Instructional Services and Drug Abuse Education, Education Service Center, 3003 Yale, Houston, Tex. 77018

Systems for Technological Information Transfer

William T. Knox

"Technological information transfer" is the dissemination of practical knowledge useful in one's work, decisions, and actions. "Technology" is equated with "how to do" and all that that implies in supporting theory, evaluation of alternatives, equipment processes, materials and facilities, and supporting procedures and technique.

The basic process in technological information transfer is the coupling of a problem and a solution. In large operations, sophisticated analytic and evaluative staffs operate with the support of a large, complicated, and costly information file. However, this information base for technological creativity in the civil industrial sector has been given low priority by top governmental policymakers. Private professional societies and trade associations have borne the burden of establishing and maintaining the nation's systems for transferring technological information in the manufacturing and service sectors. Agency administrators in medicine, defense, and agriculture, and, more recently, in nuclear energy and space technology, have created self-contained information transfer systems. Broad national policy has focused on systems that are especially beneficial to intellectual knowledge, such as the school, university, and public library systems. Consequently, separate information systems have been established for technology and the humanities, as well as for different branches of technology.

Structure of the U.S. Technological Information System

The mechanisms for transferring technological information have not

changed appreciably in the past 30 to 40 years. They are a mix of publicly supported and privately owned organizations, each pursuing its own discipline or problem-oriented objectives. Research results and some engineering and technological results are published in professional and trade journals. These reports are abstracted and indexed, and abstract journals, newsletters, and indexes are published. Monographs and handbooks are prepared by experts in specialized subject areas and put out by private, university, and government publishers. Professional and trade association meetings provide for both formal and informal transfer of information. A great deal of person-to-person transfer of information occurs by telephone and direct contact. Special libraries (most of them industry-based) play a key role in providing local access to the system.

The most important changes in the system (all of which have taken place within the past 15 to 20 years) have been: The advent of the technical report as a major records form, supplementing books and journals; Federal subsidy, by means of page charges, of journal publication; development of the computer, electronic display devices, and microforms; the creation, mostly by Federal agencies or with Federal subsidy, of computer-based files of abstracts and indexes for specific subjects, with subsequent distribution to specific user groups.

Although these changes have greatly improved the potential (and, in some cases, the actual) performance of the technological information system, they have also vastly complicated its structure and mode of use.

The User

Human physiological qualities of visual and auditory senses and assimilation ability have not changed to accommodate the added complexity of the system. The average person's assimilation of technical information appears to be no more than 150 to 200 words per minute.

Scientists and engineers spend about 3 to 4 hours a day at most on reading journals, talking with peers seeking information, and similar activities—the same amount of time they have spent for several decades. Users such as State and local governments and citizens' groups want to spend much less time getting answers. And neither old nor new users are trained in using the total technological information system.

Effectiveness of the System

A primary measure of the effectiveness of the technological information system is its capacity to allow people with problems to get in touch with potential solutions. The number of scientists and engineers in the United States has grown from 250,000 in 1930 to 2.5 million in 1970. To maintain the same access to information for users in 1970 that users in 1930 had, the information system's switching and channel capacity would have to increase 100-fold.

In all likelihood, the potential switching capacity of the system has increased by that amount, but the "busy signals" encountered and the lack of adequate directories for making couplings have tended to nullify the increases. The time available to any one individual for interaction with others has not increased. The few new switching mechanisms for information transfer, such as the National Referral Center and the Science Information Exchange created

in the 1960's, have failed to aid many of those seeking technological information. Practicing technologists prefer to use their peers and fellow employees as directories to the information system because of ease, familiarity, and effectiveness. But the time available still limits actual use of the system.

The volume of technological information, as represented by the world's scientific and technical literature, increased roughly 16 times between 1930 and 1970. Today's user cannot handle 16 times the volume of information. For the usefulness of the system to be constant, therefore, information condensers, transformers, and filters are required in proportion to the volume of information, number of users, and manner of system use.

The two basic modes of system operation are personal contacts and user interaction with recorded information. Personal contacts have proliferated as the recorded information system has proved less able to satisfy the needs of users. Nearly all the important mechanisms for personal contact increased dramatically between 1930 and 1970. Telecommunications systems, automobiles, airplanes, and printing presses, paper, and microfilm have posed no limitations to information transfer. The U.S. mail, however, frequently imposes delays. Technical libraries have probably increased only about twofold.

Signal-to-noise ratios, which are also a limiting factor, can be increased to improve channel capacity. Monographs and handbooks compress information, and specialized information analysis centers have significantly increased signal-to-noise ratios in many subjects. But there are many indications that this ratio is actually decreasing. Formal presentations at professional meetings are low in signal

content—so much so that the usual rationale for attending is to talk informally with peers. The ratio of monographs and handbooks to journal articles—an index of signal compression—has decreased; between 1930 and 1970, monographs and handbooks increased 4 to 5 times, while journal literature was 16 times greater.

Other important system parameters must be considered. How large a fraction of the user population must be served simultaneously? How fast must the system respond? How variable might be the quality of the response?

The systems transferring scientific and technical information are being asked to do far more today. A larger fraction of the users interacts with more of the information system. As in most other areas of life, so in information transfer, a fast response, a quick fix, is desired. Competition is a partial cause of the demand for speed, as is a general cultural change that emphasizes the value of time. Finally, the much greater variety of media and devices within the information system today leads to greater variety in the system's responses.

It becomes clear from this brief description of changes between 1930 and 1970 why, in spite of hundreds of millions of dollars spent, the system for transferring technological information to the user still leaves much to be desired.

Technological Information System Parameters

Definition of the problem—People seeking technological information are usually imprecise in stating their needs, but frequently question the need for a professional intermediary to help define the problem in system language. It is rare that a mature adult will admit that he is not the

master of his information system—which may be due to early childhood strivings toward, and later pride in, being able to read and write.

Expertise in the use of the system—Because of the variety of media and the separate systems in which it is stored and handled, the technological information system demands a fairly well-developed expertise in using or operating the total network; otherwise, the user must be satisfied with partial solutions. Some expertise in one or two information systems is usually developed during professional training, but as soon as the user needs information that is handled in a different system, he requires outside assistance. There are almost no opportunities for adults to develop skills for using the technological information system. There has even been regression in the availability of such opportunities during professional training.

Access to the system—Small businesses and individuals most often rely on their suppliers or a local office of a government agency. Researchers turn to their special library or to the government agency whose mission is oriented toward their field of interest. Librarians and other information professionals are frequently unsure of which access route into the total system will yield the most useful results, because of their limited familiarity with the various system units. Engineers often turn to an obsolete handbook or to their fellow employees. In no case does the user get assured entry into the total information system. Furthermore, access to the technological information system is usually available only during business hours.

Alternatives and system response—The seeker for technological information hopes that his search will yield the one solution that involves the least

cost, least effort, and greatest effectiveness. "Technology" now has that image. But the user runs into difficulty because the systems and products are not compatible in the information network. Each massive computer-based information system has its own vocabulary, indexing rules, access techniques, and output. The user's difficulty is increased by the fact that there are hundreds of directories, all of them incomplete and expressed in language and symbols chosen by the producer. As a result, there is no guaranteed satisfaction of the user's need.

Charges and system response—The user needing technological information is confronted with a complex pricing arrangement that has little or no correlation with satisfying his needs. Many services, such as those offered by libraries, suppliers, and friends, are free of direct charges but are not usually geared to different user needs. Other services, such as those provided by several Federal organizations, are partially subsidized but are unresponsive to individual needs. Still other services are offered by commercial enterprises; in these, higher prices usually result in better system response and greater user satisfaction. Most often, the user is unfamiliar with the full range of alternatives—unfortunately, so are information system professionals. Each tries to satisfy user requirements from a limited set of alternatives and frequently lacks a means of charging the user for higher quality service. To improve the user's interaction with the information system, the following steps appear desirable: Specific training for all persons in high school, college, and adult school in the technological information system; a broader, more intensive training of information professionals in the entire tech-

nological information system, in order that they may prescribe a better solution to a user's problem; much greater standardization of components of the information system—styling changes should not cause system incompatibility; greater reliance on pricing for full cost recovery, in order to render higher quality service.

Federal Information Systems in Technology

Information systems in various branches of technology have been supported and operated by the Federal Government for many years. Notable examples are the National Library of Medicine, the Department of Agriculture, and the U.S. Geological Survey. These systems were created to provide bibliographic information about, and thereby access to, the literature in their special fields. Until the 1960's, the systems were print-based, in the traditional library mode.

Beginning with the rapid increase in Federal support for military and nuclear technology in the 1950's, several new systems were established. The most notable are those of the Department of Defense, the Atomic Energy Commission, the National Aeronautics and Space Administration, and the Office of Education. The distinguishing features of these systems were their emphasis on the technical report; their use of new computer, telecommunications, and optical technologies; and their policy of free services for their specific clientele. The Department of Commerce's National Technical Information Service was also created to provide a central, public access to federally generated or supported technology, on a fee basis.

In 1963, the President's Science Advisory Committee recommended that mission-oriented Federal agencies accept a "delegated agent" duty to

ensure that effective technological information systems exist in their respective areas. Yet it also pointed out that the growth of Federal systems should be guided to avoid swamping systems in the private sector. Have the experiences of the past 10 years taught us differently, or have they reaffirmed these earlier conclusions?

The existing Federal technological information systems have a number of common elements that have contributed to their success in serving each system's group of users: There are a few well-known means of access to each system. The user is operating in a familiar field and formulates his problem in terms that are compatible with his system's ability to respond with solutions. Each system produces its own directory and catalog of published material and people working in the field. The systems include an array of information analysis centers specializing in compacting the raw information of interest to its users. The systems include organized programs of symposiums, meetings, and training in the subject matter. The systems are based on modern computer, optical, and telecommunications technologies. Channel capacity and switching capacity in the systems are adequate. Somewhat apart from the systems themselves, but contributing to their success in solving problems, is the availability of Federal or State facilities and manpower to help find general solutions to identified problems.

To assemble, fund, and operate a technological information system embracing so many diverse functions and

capabilities appears to be outside the sphere of private leadership. The lack of adequate information systems in aerospace, nuclear, military, medical, educational, and agricultural technology in the private sector was the *raison d'être* of the Federal systems. Although the private information industry has made great strides in capability in the last 10 years, it seems out of the question to expect the industry to develop overall information systems for areas of technology in which Federal agencies have missions.

There has been, however, a trend toward greater use of private information capabilities by Federal agencies. Another trend has been toward user charges. The Department of Defense has led this movement and today relies mainly on the National Technical Information Service to provide information seekers with access to the unclassified defense system—with full cost recovery from the user. A final trend has been the spinoff of information products and services from Federal agencies to private operators.

The evidence of the last 10 years thus suggests that managers of Federal technological information systems are taking steps that lead to greater involvement of the private sector in the operation of such information systems. Increased Federal effort appears necessary to develop more effective, mission-oriented technological information systems and to encourage the integration and coordination of the separate systems into a more coherent, more accessible network.

Condensed with permission from *Science*, 181(4098):415-419, 1973. Copyright 1973 by the American Association for the Advancement of Science. Reprints of original article from William T. Knox, Director, National Technical Information Service, U.S. Department of Commerce, Washington, D.C. 20230

Management of Research and Development in Mental Health

Dennis A. Romig

In the general field of psychology, especially at the graduate school level, there are rigid lines of demarcation separating the research-oriented experimentalist and the service-oriented clinician. Unfortunately, these professional self concepts and role definitions are transferred from the university to the job with the majority of positions filled by clinicians who have negative-memory associations toward research. On the other hand, those individuals trained in strict laboratory research come to the institutional setting unprepared for the problems of controlling large numbers of variables and the design problems associated with constraints and restrictions inherent in a complex environment.

Roles and Activities of Scientists

One study found that diversity of function enhances performance and that individuals should be encouraged to take on both research and applied projects. Rigid roles for both clinicians and researchers should be loosened up and they should be shown how each can benefit by some diversification and acceptance of the other role. A logical application of the results is that researchers with clinical or applied experience have the potential for more relevant contributions than individuals from a pure research background. In recruitment, administrators should be on the lookout for highly diversified individuals with both research and practical experience.

The primary responsibility of the research and development staff is to facilitate the goals of the larger institution. The researcher can help find

the answer to which direction his activity should take by methods of surveying, weighing and ranking, and policy-capturing to identify the intentions and general direction of the institution. He can give the research and development team a direction, and improve the relationship of the experimenter with the other staff members because of the implied statement of support for their activities and desire to help.

Research has shown that when the scientist is included in the decision-making of the total goals of the organization, he will be more involved and committed to insure the attainment of these goals. Too often the mental health researcher plans the research in his office, and when he attempts to apply the plan, he finds that there is either employee resistance or the plan is inappropriate. To save time and energy, the mental health staff should be included in scheduling, assigning patients to groups, transportation, and planning any activities in which they will be either directly or indirectly involved.

The Role of Communication in Research and Development

The enormous quantity of knowledge presently being produced and accumulated is requiring all professional psychologists to develop and maximize the use of effective communication channels and sources. At the institution level communication between staff members is the lifeblood of promoting effective performance.

Researchers prefer short information search sequences such as personal contacts, letters, and telephone calls.

Most research and development personnel keep current through communications with colleagues and feedback, suggesting that there should be sufficient telephone and correspondence funds and that employees should be encouraged not to stay isolated in their offices.

Other research indicates that interpersonal communication is the main information transfer channel and that interpersonal contacts enhance performance. Individuals who were consulted the most in a research project by other researchers had greater contact with experts outside the organization and more exposure to the literature. Managers should place "gatekeepers" in the center of activity, by encouraging contacts through the hierarchical chain of command, by requiring them not to stay on the job in one place, by providing access to conferences and scientific literature, and by not promoting them.

Informal communication should be encouraged and facilitated through location of the coffee pot and lounge areas, liberal access to travel and use of long-distance telephoning, more direct access to a variety of publications, frequent contact with many colleagues. PhDs should be assigned on the same project with individuals of lower status to facilitate more communication from PhDs to non-PhDs. Opportunities should be available for all staff members to communicate with each other instead of the usual requirement of not going above your immediate supervisor. Additionally, employees should not expect the world to come to them.

The Diffusion of Innovation

The final problem, which is perhaps one of the most pressing in the mental health field, is, How do you get new methods or techniques that are of proven superiority accepted and adopted? In the mental health field, a new innovation may not only involve a change in one's professional practices, it may require drastic changes in one's self-perception.

Several general characteristics on the diffusion of innovation tend to influence the speed of its adoption: The more apparent the superiority of the innovation, the easier it is to explain, and the less change in existing equipment and procedures that is required enhances the speed of utilization of the innovation. Professional psychologists endeavoring to promote the use of a new method of therapy, consultation, or diagnostic evaluation should spend considerable energy in communicating its superiority and ease of adaptation through concise and efficient communication and simple visual aids.

Research has shown that younger age groups, individuals of higher than average education and social class, and individuals in newer organizations tend to adopt innovations earlier than others, indicating that organizations should hire from those groups to promote the acceptance of new techniques. To provide personal experience with a new therapy or diagnostic technique a tape recording of the use of the technique should be left in the coffee lounge. At conventions, demonstrations of recently developed clinical or research techniques should be used.

Condensed with permission from *Professional Psychology*, 4(3):265-269, 1973. Copyright 1973 by the American Psychological Association. Reprints of original article from Dennis A. Romig, Ph.D., Clinical Director, Brownwood State Home and School for Girls, P.O. Box 1267, Brownwood, Tex. 76801

Bureaucracy in Research: A Study of Role Conflict of Scientists

M. K. Badawy

The relationship between scientists (and other professional employees) and their bureaucratic research and development organizations has been the subject of extensive research in the last 2 decades. In much of this research, the issue of whether scientists are different from other industrial employees, and thus generate special conflicts in the scientific-organizational relationship, is a controversial one; some contend that the bureaucratic organizational design is inappropriate for professional scientists because of the inherent incompatibility between professional and organizational norms and values, and thus new or better organizational models need to be developed for better management and utilization of industrial scientists. Other investigators believe that conflict and strain between scientists and bureaucratic organizations have probably been exaggerated. Furthermore, the premise in much of this research is that both scientists and engineers are the same—no clear distinction is made between “professional” employees’ attitudes and problems in industry. The net result is more generalizations which have led to erroneous conclusions and misleading interpretations.

The purpose of this paper is to report some findings of a study of the role perceptions of industrial scientists as a group distinct from engineers. For the purpose of this study, “Scientists” are defined as persons having doctoral degrees in physics and chemistry who devote all their time to scientific research and development activities.

The universe for this study con-

sisted of 100 scientists who were working in the research laboratory of a leading industrial organization in the field of communication technology in the spring of 1969. Respondents were working in the same organizational unit and were reporting to the same supervisor. The organization under analysis—identified as Lab A—is a subunit of a larger research and development organization which employs about 15,000 people. The main source of data was a 21-item questionnaire which was mailed to 60 scientists who were randomly selected using a table of random numbers from a population of 100. Most of the questions were selected from the literature. The decision on the number of subjects studied was made strictly by the company. Returns were received from 45 and all replies were usable.

Although Lab A—the subject of this study—was not a typical example of bureaucracy, bureaucratic elements, as in any other huge organization, were visible in terms of the presence of a structural design based on subgroups, hierarchical authority systems, rules and procedural specifications, and standards for measurement and control. Questions concentrated on the following dimensions: Organizational goals, organizational structure, organizational system of authority, and organizational controls. To ascertain the types of conflicts, if any, existing between scientists and their organization, respondents were asked questions regarding their perceptions of these organizational variables as sources of conflict. To measure the severity (or intensity) of scientists’ perceived organizational conflict in

each of the four areas, respondents were asked to check a point on a continuum ranging from "there is no conflict" to "the conflict is very serious."

Sources of Conflict

Organizational goals—In order to measure the scientist-organization goal conflict respondents were asked three questions. One question was directed at perceived company goals and respondents were asked to indicate out of eight possible goals the three goals most applicable to their company.

The respondents viewed their organization as primarily having a business orientation that shaped its goals. The three basic goals of promoting developmental research, expansion and growth, and serving the nation and community were seen to be typical of the organization. Other goals such as "promoting basic research" and "providing superior employment conditions" were not considered as important for top management in this organization. In spite of the importance attached to fundamental research in this organization's work activities, respondents believed that priority had been given to the development of new designs and products. It is noteworthy here that "profit maximization" as a company goal ranked fourth while "promoting basic research" ranked fifth.

Respondents were also asked about their degree of interest in what they considered the company's primary goals. Data support the notion that the scientists' personal goals and the organization's goals are not the same. Only 29 percent of the respondents viewed scientists having the same goals as management while 71 percent saw scientists' goals as different from those of management.

The extent of conflict between scientists' goals and those of the organization was measured by the subjects' responses to a question about the magnitude of conflict. The majority of respondents felt that "there is some conflict between their goals and those of the organization, but the conflict is not serious."

Data about scientists' goals collected in this study demonstrated that subjects appeared to have professional goals which were oriented toward advancement of knowledge for its own sake, toward establishment of a reputation through publishing, and toward research achievements that would bring professional recognition. This implies that scientists and business executives have different interests in research. Business organizations are mainly interested in turning research to practical use through the development of some practical product or process; scientists are primarily interested in achieving and pursuing the basic goals of science—contribution to knowledge through pure research and discovery of the unknown.

Scientists are more oriented toward their scientific profession. The scientists' role as a professional will make certain demands on him that will conflict with the business-goal demands of his role as a bureaucratic employee, creating some tensions and frictions in the scientist-organization relationship. It may be interesting to note that the organizational goals were the least source of scientist-organization conflict. Twenty-seven percent of the respondents saw no conflict at all between their goals and those of the organization.

Professional scientists are likely to perceive a discrepancy between their goals (contributing to scientific knowledge *per se*) and professional standards and those adhered to by the

employing organization (profit). Accordingly, the scientist may feel he is not "earning his keep." To counterbalance this disquieting feeling, the basic researcher may seek refuge in his status as a member of a scientific community with its norms of contributing to the body of scientific knowledge.

Scientists who were the subjects of this research tended to view their organization as primarily having business goals that were not in accord with their personal and career goals. The scientist's conception of his role and expectations, therefore, may be different from those of the administration. Although there is evidence—from the literature as well as from this study—that the goals of scientists and managers are potentially conflicting, there is also evidence suggesting that this potential conflict usually does not reach explosive proportions, and at least it is not general enough to result in the large-scale breakdown of organizations. In this study, the scientist-organization goal conflict was less than that shown by other studies, but this finding should be viewed with caution. Treating all scientists as members of a profession disregards the variety of occupational role relationships which may be found in a number of different industrial organizations or even in a single laboratory. Because industrial scientists may hold as many as four or five different (and often conflicting) normative expectations, the amount and intensity of goal conflict between scientists and their organizations is probably a complex function of several factors.

Organizational structure—Two questions were asked about the organizational structure as a perceived source of conflict and friction for the scientist's career and research aspirations.

Seventy-eight percent of the respondents agreed that the formal organizational structure produces strain and friction in their relationship with the company. Moreover, respondents generally felt that there was some conflict between their needs and the typical organization structure, but that the conflict was not serious. The latter finding about the typical formal structure as a perceived source of scientist-organization conflict is not surprising. Since structures are means to carry out organizational ends, and since organizational and scientific goals, as was shown above, are not the same, it follows that the formal structure designed to achieve the organization's core activities may not be the ideal design conducive to scientists' optimum performance and creativity. It is probably safe to say that the scientific profession and bureaucracy as two organizational modes rest on fundamentally different or divergent principles. It follows that professional roles and organization necessities will conflict. This assertion is in line with the findings of other studies.

It is noteworthy that about one-third of the respondents in this study viewed the conflict aroused by the formal organizational structure to be "fairly serious." Moreover, this conflict was perceived to be more frequent and more serious than that aroused by organizational goals. The amount of conflict, as well as its magnitude, created by the formal organizational structure, however, is a function of several factors, including the scientist's degree of "local" or "cosmopolitan" orientation and the organization's degree of bureaucratization.

Organizational authority—Eighty-three percent of the respondents did not favor the traditional organizational authority system based on

power, title, and politics, but preferred an authority style based on "scientific competence." Moreover, the majority of respondents tended to see the conflict between both types of authority systems—authority based on knowledge and authority based on power—as "fairly serious." It is noteworthy here that scientist-organization conflict aroused by the organizational system of authority was perceived to be more frequent and more serious than the conflict emanating from organizational goals, structure, and controls. It follows that the traditional organizational authority system might be inadequate for scientists. Other research evidence supports this contention.

The divergent principles on which the bureaucratic and the professional "scientific" types of authority are based will generate conflicts and tensions between scientists and their organizations. It appears that the problem of allocation of authority between professional scientists and bureaucrats does, however, vary in intensity and form in different kinds of organizational settings and depends on different degrees of the scientists' professional or organizational orientation.

Organizational controls—Respondents were asked to indicate the status of each one of five administrative procedures as a source of restrictions and troubles between themselves and their organizations. Sixty percent of the respondents felt that organizational measures of control and coordination are a major source of problems. Particularly, "project evaluation" procedures were considered the most hampering formal measure adopted by the laboratory. "Budgeting allocation" procedure came second, followed by personnel evaluation," followed by the procedure for "equipment control." "Research proposal" procedure was

considered to be the least source of troubles and restrictions for Lab A scientists. Moreover, data show that although organizational controls create some tensions and strains in the scientist-organization relationship, the conflict is not serious.

A number of other studies do confirm scientists' resistance to bureaucratic rules that put various restrictions on their activities and performance. Managerial rules and controls produce strain, conflict, and tension because they minimize the opportunity to perform work in which scientists can experience a sense of challenge, a meaningful contribution, control over their work activities, and opportunities to make decisions that count.

The professional pattern of "colleagual" control is probably inconsistent (or incompatible) with the bureaucratic pattern of "hierarchical" control. Procedures, as viewed by scientists, are merely means to an end which, when proved ineffective, are ignored or discarded. The bureaucracy, however, superimposes its own rules which constrain the professional scientist's behavior in various ways and, specifically, constrain his choice of means. This would lead to conflicts and tensions in the scientist-organization relationship. The presence of this conflict, and its magnitude, however, would vary depending on the degrees to which organizations are bureaucratized and scientists are professionalized.

Some Operational Implications

This study did support the notion that the scientist-organization relationship is probably characterized by strain, tension, and conflict that will arise from the divergent professional and bureaucratic principles of organization. It seems to me that scientist-

organization conflict—which is assumed to be dysfunctional for both parties—could perhaps be resolved (or at least reduced) through a series of adaptations between scientists and their bureaucratic organizations. Changing scientists' roles (through developing roles and role conceptions) to fit the demands of bureaucratic organizations is one example of such adaptations. Another approach is to change the designs of such organizations for better accommodation of this group. My main concern here will be with the latter mechanism.

First, organizational style for the research enterprise should not be based on stock solutions developed for "professionals" as a group, but rather on "professional differentiation"—on whether the professional is a scientist, an engineer, or other professional. Differences in role orientations between these groups of professional manpower should be comprehended for enhancing management's knowledge about them and for designing better organizational climates for them.

Second, the bases of allocation of authority between professional scientists and bureaucrats should probably be changed to the "colleague" system—a type of authority presumably based on persuasion, scientific competence, and power that will be exercised not from top to bottom but sideways. In designing organizational authority structures for scientists, management should, however, understand that the nature of the scientist's work activities (i.e., basic vs. applied research), the degree of his organizational or professional orientation, and

his perceived organizational role, will have much to do with his preferred authority style.

Third, there is a need for an accommodation between the scientist's need for the collegial pattern of control and the organization's need for the pattern of superordinate control. Control mechanisms (project evaluations, research proposals, etc.) for example, should be designed in such a way that decisions are made on the basis of both professional and administrative considerations. Long-range planning, encouraging scientists' participation in the choice and evaluation of professional work, and providing overall direction and coordination with the primary goals of the organization are all appropriate mechanisms for controlling scientists' activities and performance in organizations.

Fourth, the typical formal organizational structure of the research enterprise is probably inadequate for scientists and should be altered. An organizational model with a decentralized decisionmaking structure, a relatively small degree of formalization among the organizational positions, and a well-established communication network would probably be more appropriate for scientists.

Finally, the typical bureaucratic reward structure—based primarily on extrinsic rewards such as money, titles, status symbols—has to be redesigned. This could be done through the establishment of differentiated, but equally attractive, reward systems for scientists and nonscientists which employ appropriate motivational forces and permit both administrative and technical career paths.

Condensed with permission from *Human Organization*, 32(2):123-133, 1973. Copyright 1973 by the Society for Applied Anthropology. Reprints of original articles from M. K. Badawy, Ph.D., Assistant Professor of Administrative Sciences, Cleveland State University, 1983 East 24th Street, Cleveland, Ohio 44115

Telepsychiatry: Psychiatric Consultation by Interactive Television

Thomas F. Dwyer

There is agreement that improvement of medical care will require a restructuring of the patterns of health care. Incorporation into medical practice of technological innovations is part of such reorganization. Interactive television (IATV), which links separated locations by two-way audiovisual signals that are transmitted by cable or microwaves, deserves attention for its contribution to improving medical care and, specifically, psychiatric care. Since cable television systems can carry interactive medical care if channels are reserved for this purpose, defining the role of IATV in medicine has become urgent.

The Setting

The microwave bidirectional television linking the Massachusetts General Hospital (MGH) in Boston with Logan International Airport Medical Station (about 2.7 air-miles away) began in April 1968. The medical station, a unit of MGH, is manned 16 hours a day by nurse-clinicians with special training in diagnosis and therapy and by physicians who are present for a few hours each day. In one examining room there is a remote-controlled camera, as there is in a room at MGH. The controls at the MGH end permit the operator to move both cameras to follow someone around either room, to zoom in and out, and to alter the focus. There is also a hand-operated camera at the medical station to permit close-ups or a different view; a switch at MGH determines which camera will be used.

There is also a 17-inch monitor at each end that shows the scene at the

opposite terminus. The camera is located below each monitor so that the person talking to the individual on the monitor is picked up by the camera in such a way that it appears as though he is looking at the person at the other end. The cameras require ordinary lighting, and there is nothing about the rooms that is suggestive of a studio. The system permits the microwave transmission of such data as ECGs, blood pressure, and blood smears magnified 1,000 times. The system, called Telediagnosis (TDX), permitted the delivery of care to more than 1,600 patients up to mid-1971.

Psychiatric Service for Individual Patients

Shortly after TDX linked MGH with the medical station in April 1968, patients needing psychiatric help were interviewed and treated or referred. Most patients seen over TDX in the 1st year represented emergency problems. Beginning in April 1969, in preparation for opening the closed-circuit link to Bedford, I invited the medical station professionals to schedule for me all patients with psychiatric problems. Later I arranged for other psychiatrists, psychiatric residents, and medical students to contribute time for psychiatric consultations. During the subsequent 2½ years, I saw about 30 patients and my colleagues saw an additional 120, each patient being seen between 2 and 20 times.

Patients are brought into the medical station TDX room by the receptionist and introduced to the physician on the monitor; the receptionist then departs, leaving the patient "alone." To protect against invasion

of privacy, we have a rule that no one is allowed to observe a transaction without obtaining the permission of the patient and the professional. Written permission is not sought except in the less usual instance where video-tape recording is planned. With few exceptions the patients were being seen by a psychiatrist for the first time.

The following case is an example of an IATV transaction.

A male trucker came to the station with minor hand injuries incurred while unloading a truck. He appeared depressed and tense, and was offered and accepted a psychiatric evaluation via IATV. In the interview with me, he talked of his wife, from whom he had been separated, and of their children. Projection of his anger was prominent, and it was evident that he was a depressed man who might have paranoid ideas. During an interview a few days later, there was increased evidence of paranoid thinking and tension. He complained about being "hemmed in" and asked if I remembered the sniper in a Texas tower; he had thoughts of climbing to the roof and "shooting it out" with the police.

The depression and anger left me uncertain of what this man might do. My unfamiliarity with the system made me uneasy and led to my giving him an appointment instead of referring him for clinic treatment as I had planned.

Early in the third interview I confirmed my impressions that the man was a manipulator, and I became more confident that he was trying to make me feel anxious. I was able to discuss referral to a psychiatric clinic and to elicit his negative feelings about psychiatrists. Talking these feelings out, he accepted referral.

This patient represented an extreme test for a psychiatrist new to IATV. Being forced to decide whether the patient was homicidal during the second interview created considerable anxiety and uncertainty. By the third interview, familiarity with the system and a conviction that the patient was following familiar patterns of behavior enabled me to

act as I would if the patient were in my office.

Although a small proportion of patients had severe psychiatric disorders, the majority had acute situational crises and could be helped in one or two interviews. Services provided to individual patients have ranged from diagnostic interviews for adults and for children as young as age 12; treatment using interview techniques alone or a mixture of interviewing and prescribed drug therapy; brief intervention in acute crises and prolonged supportive and explorative therapy for some patients with a character disorder or with a frank psychosis. Group therapy has been effective, although requiring modification of the audiovisual equipment for higher fidelity.

Psychiatric Service to Institutions in the Community

While continuing to provide psychiatric services to individuals, we have, since August 1970, sought out a wider variety of psychiatric uses and users. Our aim has been to discover what psychiatric activities can be conducted with the system. A longer-range goal is to determine the feasibility of this or modified systems as vehicles for delivering various types of mental health care.

Junior high schools—Since September 1970, the principal and teachers from the junior high school in a town about 10 miles away from the airport have traveled via TDX to a weekly meeting with a psychiatrist; the counselor has a separate weekly meeting with the psychiatrist. Problems with individual students and general issues are discussed and students are referred for evaluation or counseling when these are needed. Several months after these consultations began, the children were invited to use

the system to talk from the station with a professional at MGH in small, self-selected groups. Each group met three times during school hours. Out of 160 students, 60 indicated an interest and returned with signed permission from their parents. After the groups had begun to operate, positive feedback resulted in 20 additional students joining the groups, so that finally about half of the children in the school were seen. Other junior high schools, two from East Boston and one from Chelsea, are sending children with problems to the system for evaluation.

Municipal court—Beginning in September 1970, weekly meetings between a psychiatrist and the probation officers of the municipal court in East Boston were established. Problems that the probation officer encountered with the juveniles are explored with the psychiatric consultant and, where appropriate, the youngster and his parent are referred for evaluation by an appropriate professional. The majority of these juveniles are referred for evaluation of their drug use and treatment needs.

Deer Island House of Correction—Starting in May 1971, prisoners at the Deer Island House of Correction required to have a psychiatric evaluation have been taken to the station and interviewed via IATV by a professional at MGH. This use of IATV has resulted in rendering prompter service to the prisoners and in cutting the evaluation time to approximately 1 hour. All of this hour is spent with the prisoner, as compared with a minimum of 3 hours previously spent for the trip.

Voluntary youth agencies—Voluntary institutions organized to take care of juveniles have been bringing their clients to the station for evaluation of the youths' psychiatric problems.

These youngsters are frequently runaways or "throwaways."

Staff meetings—The nurse-coordinator of telepsychiatry and other personnel at the medical station met regularly via IATV with psychiatrists and others involved in the project at MGH. This allows for information exchange and is used to provide insight into the use of IATV.

Extensions of Telediagnosis currently under review—The demonstrated usefulness of the TDX system has stimulated proposals for extending it. The development of Teleconsultation, connecting MGH with Bedford VA Hospital, was in part an outgrowth of the demonstrated effectiveness of IATV. Plans are being considered to connect MGH with the nearby Bunker Hill Health Center in Charlestown. The existing IATV link between MGH and its medical station is being used as a "pilot plant" with individuals who are outside the airport population. If uses by a variety of individuals and institutions seem feasible, the IATV system will be extended. We envision a satellite facility comparable to the medical station in the East Boston community. It will serve as a health center for all ages and will be linked to the medical station by microwave.

I approached the use of television to interview psychiatric patients with considerable prejudice, believing that personal contact with the patient would be limited and that many skills useful in a psychiatric interview would be diminished or lost. I was surprised to discover that this was not true. Other psychiatrists were skeptical of the feasibility of interviews by this medium, but those who used TDX became positive about its potential for one-to-one and group therapy.

If the previous experience of psy-

chiatrists has been limited to watching unidirectional television programs that provide no opportunity for interaction they have an inappropriate model for visualizing psychiatric transactions over an interactive television system. The preponderant current uses of television in medicine include live, one-way transmissions and making video-tape recordings for purposes ranging from education to therapy. These applications are enormously useful. However, there is no interaction between the viewer and the person on the monitor. The interaction that takes place in bidirectional television makes this experience qualitatively different from other experiences with television.

The introduction of new methods to facilitate medical care frequently stumbles over problems of acceptance. The stethoscope, for example, was ridiculed when it was proposed as an aid to chest examination. We have collected observations of professionals who, apparently out of anxiety in their initial encounter with the system, complained that they could not see or hear the person at the other end, while at the same time neglecting to use the simple controls that would have enabled them to bring the patient into focus or to turn the volume up. The use of IATV will proceed quickly if the organizers cope with the irrational responses of some users.

The fact that one can have psychiatric transactions over IATV with all of the usual developments, including transference and countertransference reactions, is important and calls for reexamination of some fundamental concepts about the nature of a relationship between two people, how it is established and maintained, and what interferes with it. The fact that two or more people can be "in touch"

with each other even though the contact is mediated by electronics invites a questioning of many beliefs that we take for granted. It is too early to say that *nothing* is subtracted from the television interaction as compared with interaction in the same room, but it is clear that a high degree of personal contact can be made between two or more individuals using IATV. It remains to be seen whether there are patients or professionals who find a crucial ingredient missing in IATV contact. If it is discovered that essential elements of human contact are missing, the possibility will remain of discovering substitute measures to achieve what is wanted. An example is the handshake. It is possible that it can be replaced by verbal or by non-verbal expressions.

Experience suggests that for some patients communication by means of IATV is *easier*. This appears to be true of certain patients with schizophrenia and with adolescents and younger children. On the other hand, a rare patient has shown anxiety for the first few moments, but has then proceeded normally in the interview. Several patients with delusions have been interviewed over IATV, and none has incorporated the television system into his distorted thinking.

An IATV system offers the possibility of a leap forward in carrying psychiatric help to the population. A rationally planned psychiatric care system would include the provision of three kinds of facilities interconnected by IATV. In the community a medical station manned by nurses and other professionals who have been trained to diagnose and to treat psychiatric problems would provide immediate psychiatric help; the treatment of many patients might end there. If the diagnosis or treatment were in doubt, the patient would be

seen via IATV by a professional from the community or urban hospital and treated or referred. Patients who now need to go through complicated and irrational webs to find psychiatric help would be treated near their homes. The network has potential for the early detection and treatment of problems and more efficient use of helping persons and thus offers a method for a more cost-effective application of mental health principles. The costs will be substantially lower if telepsychiatry is a subsystem in a larger telemedicine system that uses time-sharing to attain maximum effectiveness.

A further consideration is the rational use of space. The medical station has a sizable waiting room that has absorbed, without any dislocation of its activities, the additional traffic generated by telepsychiatry. Space in a hospital such as MGH is costly and at a premium. One accomplishment of IATV for medical use is the reduction in transporting people, whether patients or professionals. Only those persons requiring hospitalization for a psychiatric disorder would be transported to the hospitals. Large numbers would be screened out of congested centers by receiving early and appropriate treatment at the satellite facility.

The system is not envisaged as a one-purpose medical facility. Current and impending changes in medical practice require that a good deal of the wisdom that practitioners in the community have be shared with colleagues in medical centers and that practitioners have easier access to new knowledge. The IATV system can serve as a medium for exchanging in-

formation in a two-way operation.

There are new legal requirements with regard to medical care that will enhance the usefulness of IATV. In Massachusetts a law being implemented requires an increased minimum number of mental and physical examinations for patients at State hospitals. It seems unlikely that these requirements can be met by the staffs of the hospitals; alternatives include the addition of (unavailable) psychiatrists or putting the ones available to better use by means of IATV.

The revised standards set forth by the Joint Commission on Accreditation of Hospitals, which require each hospital to have a written plan for the care or referral of individuals needing mental health services, will enhance the usefulness of IATV. A hospital that is unable to supply all the psychiatric assistance necessary to maintain its accreditation could have the appropriate services were it connected to a functioning IATV psychiatric link.

Increasing use of IATV for direct psychiatric care and consultation calls for measures that will ensure the privacy of the patient and the professional. Existing principles are adequate, but they need to be spelled out and thought through in their application to exchanges that take place with IATV. Personnel, unless otherwise oriented, may become casual about wandering in and out of the rooms where interviews are being conducted. Since this can be done without any disturbance to the patient—indeed, without the patient's knowing it—it is more crucial than usual that the professional take complete responsibility for the protection of those involved.

Condensed with permission from the *American Journal of Psychiatry*, 130(8):865-869, 1973. Copyright 1973 by the American Psychiatric Association. Reprints of original article from Thomas F. Dwyer, M.D., Massachusetts General Hospital, Fruit Street, Boston, Mass. 02114

Effect of Proximity on Anxiety and Communication in the Initial Psychiatric Interview

Carol L. Lassen

In the interaction between two conversing individuals, physical distance is usually considered to be relatively unimportant. Recently, investigators have begun to explore the dimension of interaction space as a variable in the relationship between persons. This paper reports the effect of physical distance between psychiatrist and patient upon the patient's anxiety as measured by speech disturbance and upon the patient's ability to communicate.

Sixty initial interviews, conducted by four psychiatric residents, were tape recorded. Each resident interviewed five patients in each of three conditions: 3 feet, 6 feet, and 9 feet. Distance was measured face to face. Residents knew that the experimenter was varying seating distance but were not aware of the dependent measures. After the interview, all patients returned and filled out a 5-minute questionnaire administered by the experimenter.

The sample consisted of 31 males and 28 females, ranging in age from 16 to 61 years. The patient's chair was placed along the wall next to the door. In the 3-foot condition, the interviewer's chair was at immediate right angles to his, with the lamp table on the other side of the interviewer. At 6 feet, the lamp table could be reached by both interviewer and patient, and the angle was 135°. Nine feet was the maximum distance attainable in this room; the lamp stayed within reach of the patient, and the angle between patient and therapist was 150°.

Patient speech disturbances, rater-judged overt anxiety, and rater-

judged content anxiety were scored from the interview tapes and patient self-reports from the postinterview questionnaires. Therapist reactions were informally evaluated through poststudy interviews.

Patient questionnaire items were rated on a 6-point scale. Questions included how anxious the patient felt during the interview, how clear he had been in expressing his problems, how open he had been in talking about himself, whether he believed he had gotten his point across, and how sure the patient was about how his interviewer felt about him.

Speech Disturbance Ratio—The Speech Disturbance Ratio showed a consistent increase from 3 to 6 to 9 feet in the main body of the interview, and a similar increase from 6 to 9 feet in the summing-up period.

Thus, patients displayed increased anxiety the farther they sat from the therapists. Possible reasons why increased distance might result in increased speech disturbance are: The angle of seating is more direct at 9 feet than at 6 feet, and slightly more direct at 6 feet than at 3. It may be this more direct angle of confrontation which is anxiety producing. Research has shown that individuals apparently have greater distance limits of approach and show greater physiological response when approached from the front than when approached from the side. In this experiment the two independent variables, distance and angle, were varied together deliberately, according to natural and usual seating arrangements. Greater distances of "being observed" creates anxiety. At 9 feet, one views the en-

tire body of another individual, rather than just the upper trunk, as at 3 feet. At 9 feet, distance and angle combine to expose a greater volume of the body to direct observation, and given a set for psychiatric evaluation, anxiety may well increase.

At 3 feet one can mumble, turn one's head away, and still be heard; at 9 feet one must focus and project one's voice to another part of the room. Perhaps the task of focusing on another individual, in addition to communicating personal problems, contributes to increased speech disturbance at greater distance.

Certain defensive behaviors appear to increase with closeness. Eye contact decreases, physical compacting increases, mumbling probably increases, and in this study patients limited their discussion of fear at 3 and 9 feet. It is conceivable that such behaviors permit more adequate defense against ongoing anxiety at 3 feet than at 9. It is also possible that therapists conducted interviews differently at different distances.

Communication effects—Patients said they did not get their point across as well at 9 feet as at the other two distances. There was also a trend for them to feel they had been least clear at 9 feet. There appears to be a disruption in communications at 9 feet, one which patients are aware of. Feeling unclear and unable to make one's point, plus the observable increased Speech Disturbance Ratio, all would appear to reflect the disorganizing effect of anxiety. Patients did not report themselves, however, as more anxious.

This finding suggests that the 9-foot

condition is considerably more threatening and/or disorganizing, and that it is more taxing to communicate at that distance. There is no evidence that at 9 feet patients see their therapists as uninterested, unresponsive, uncaring, rejecting, or cold.

Therapist reactions—All the therapists preferred the 6-foot condition, but they were split evenly over their second preference, 3 feet or 9 feet. They seemed to adapt somewhat to the 3-foot condition, unless a patient was particularly flirtatious, hostile, odorous, or fat. They seemed to adapt less well to 9 feet, often feeling out of touch and having to prod themselves to listen. Generally they made more comments to the experimenter about the distance at 3 feet and more comments about the person at 6 and 9 feet.

Implications for initial interviewing—With the caution that this study was exploratory, one can consider some implications for the initial psychiatric interview: There is no evidence that one can create a more intimate relationship by sitting progressively closer for an initial interview or that distance affects perception of the interviewer. Six-foot distances may create optimum conditions for openness and discussion of fear, at least in a moderately small room. Patients may have difficulty in communicating their problems when they get as far as 9 feet away, and they locate this difficulty in themselves, not in their response to the therapist. Evidence suggests that a patient becomes more anxious the farther he is from his interviewer, and/or he is better able to defend against anxiety at 3 feet than at 9.

Condensed with permission from the *Journal of Abnormal Psychology*, 81(3):226-232, 1973. Copyright 1973 by the American Psychological Association, Inc. Reprints of original article from Carol L. Lassen, Ph.D., University of Colorado Medical School, Division of Clinical Psychology, 4200 East Ninth Avenue, Box 2259, Denver, Colo. 80220

An Evolutionary Analysis and Theoretical Account of the Discontinuous Nature of Human Language

James E. Goggin

In behavioral psychology, relatively fixed theoretical models have minimized the role of evolution in explaining the complexity of human development. While there is not fully integrated evolutionary theory subsuming both behavioral and internal processes which adequately account for the acquisition of human language, there are different species characteristics which can be described. For example, there is descriptive evidence to indicate that different species on the phylogenetic scale possess different capacities to modify behavior. This evolutionary account of behavior modifiability can be summarized and integrated into five hierarchical levels:

Sensory integration, or habituation;
Classical conditioning, or stimulus substitution;

Operant conditioning, or selective modification of the response repertoire;

Insight, or afferent configural conditioning;

Symbolization, or representation.

Principles of an Evolutionary Theory

Hierarchy of levels of behavior modification—According to the hierarchical approach to behavior modification, each higher level of modification has evolved from a lower level and in turn evolved some functional laws not derivable from its antecedent. In addition, higher centers can facilitate lower ones and inhibition may occur between centers of the same evolutionary status. The advantage of the hierarchical organization lies in the fact it provides greater complexity and reduced stereotypy of

behavior. Members of a species gain the flexibility to adapt to changing environmental challenges and increase the probability of survival.

Level interaction—Lower levels coexist with higher levels so that modification manifests itself in the operation of all levels.

Response dominance—Specific modification effects can differ at different levels producing level conflict and level cooperation. Under normal conditions the higher level response dominates the lower level. The concept of response dominance refers not merely to one sensory system, but to all systems.

The concept of response dominance across sensory modalities suggests the need to include two factors derived from developmental and comparative psychology: the hierarchical organization of sensory systems and the capacity for intersensory integration. Species on the phylogenetic scale differ in the hierarchical organization of their sensory systems. This hierarchical organization determines what aspect of the environment will be effective for the species. For example, the hierarchical organization of sense systems in man shifts from a predominance of interoceptive sensory modalities and visceral sensations to teleoreceptor systems (auditory and visual). It would appear that this shift is significant in language development. As one ascends the phylogenetic scale, it appears that the evolution of the central nervous system has not been the introduction of new senses, but better liaison between the old sense systems. This capacity for intersensory integration enables different sensory avenues

to become equivalent and makes it possible for one sensory experience to affect a different sense system. This might have a strong influence on the development of human language.

Definition and Classification of Language

Human language is an ubiquitous concept which is highly contingent upon theory for definitive classification. It is not a simple unitary attribute, but multidimensional and highly interrelated with other developmental processes. While different schools of psychology and linguistics define language in a variety of ways, the following characteristics can be abstracted:

- Human language is a system of behavior and potential behavior which follow certain grammatical rules.
- Language behavior has the capacity to influence the behavior of other people.
- Language behaviors are relevant or appropriate to the user's environment, but are in part independent of the environment.
- Language behavior may be inappropriate or wrong (e.g., grammatically or an incorrect description of events). The comprehensiveness of the classification demonstrates the complexity of the behavior involved.

Language Acquisition as Phyletic Continuity

When mechanisms of behavior modification which are operative in species lower on the phylogenetic scale are effective in producing changes in the development of human language, this phenomenon is considered to represent a phyletic continuity. In terms of the evolutionary approach to behavior modifiability, human language acquisition has been accounted for by the processes of classical conditioning, operant conditioning, a combination of these theo-

ries, and a neobehavioristic theory.

In terms of classical conditioning theory it has been easier to account for the receptive acquisition of language than for its expressive use. The classical conditioning explanation runs somewhat as follows. A stimulus, for example the word "water," becomes associated with a glass of water in such a way that part of the reaction evoked by the glass of water becomes evocable by the stimulus "water." However, since classical conditioning is a process of stimulus substitution, it requires the child to have a repertoire of words. Since babies do not come equipped with ready-made words, classical conditioning cannot account for the child's expressive use of language. A second inadequacy of classical conditioning is that it is rather ephemeral. The ability of the conditional stimulus to call out the response in the absence of the unconditional stimulus has been found to extinguish with the repeated exposures of the conditional stimulus.

Because classical conditioning is somewhat unstable (open to extinction) and cannot adequately account for the acquisition of expressive language, operant theories have been used to explain this phenomenon. It is assumed that the child makes responses to stimuli, until it makes one that is appropriate and reinforced. By the method of successive approximation (shaping), expressive language is built into the child's repertoire. Operant principles cannot only account for certain aspects of the acquisition of expressive language, but also can explain the long-term stability of expressive language by the concept of intermittent reinforcement.

In order to account for the complexities of human language, such concepts as discrimination, generalization, imitation, self-reinforcement ver-

bal mediation and two-factor theories have been used by the classical conditioning and operant behavioral schools. The mediation hypothesis has contributed the most sophisticated explanation of a complex linguistic property (meaning) in neobehavioral terms. In essence, meaning is accounted for by proposing hypothetical mediation processes which render dissimilar situations equivalent by virtue of constituting the common organism's response evoked by each situation. Knowledge is conceptualized as an organization of habits in hierarchies which reflect the individual's past experience.

The evidence indicates that classical and operant mechanisms do play a role in language acquisition. Since classical and operant conditioning and their variations are involved in human language development, and these behavioral capacities are exemplified in organisms on lower levels of the phylogenetic scale, it can be inferred that a continuity between phyletic levels exists.

Language Acquisition as Phyletic Discontinuity

Man's capacity to use "meaningful" words in an orderly way not bound to time, place, or space is assumed to be contingent upon symbolization. While language is not the only manifestation of man's capacity for symbolic behavior, it is an important medium for transmitting symbols. Human language is characterized by the capacity to use words propositionally, meaningfully, to bind time, and to transmit purpose and understand cause and effect. It is my contention that levels of behavior modifiability do not meet the necessary theoretical criteria to account for these properties.

Man's capacity to use words propositionally—The ability to combine

simple linguistic units (words) into more complex linguistic units (sentences) is the capacity to use language propositionally. A recent work on the phylogeny of communication has analyzed language into a series of design features. In general, man's rich combination of design features makes human language unique. Specifically, it is man's ability to order and reorder words into new combinations that distinguishes man from other species on the phylogenetic scale. That man is capable of ordering and reordering words into an infinite variety of combinations according to grammatical rules has also been demonstrated by developmental psycholinguists. The problem posed by developmental psycholinguistics is to account for the fact that different children exposed to different samples of speech do develop similar grammatical structures. In this sense grammar has been defined as an attempt to account for any speaker's ability to generate correct sequences of words in his language. That is, overt speech follows the covert rules which the developmental psycholinguists are trying to discover.

Man's capacity to use words meaningfully—Language systems become arbitrary in the process of man's acquisition of semantic denotations and implications. Almost all verbal forms acquire their initial meaning through association and context. These word meanings (or signals) are concrete. Words become more symbolic and effective factors in controlling behavior only after a shift from signal to semantic levels is made during the child's development. When words operate as signals, responsiveness is invariable and takes place without evaluation of context. Signals trigger responsiveness in a predetermined way and this is about as far as pri-

mates develop their linguistic systems. Symbolic verbal behavior, however, is conditional, contextual, and complex. Only after the distinctive semantic (meaning or differentiated cognitive content) aspect of language predominates over phonetic and motoric response patterns do words acquire the unique symbolic properties which lead to verbal control of behavior. As the child grows older this shift to higher level semantic functioning increases, until attitudinal control (a result of complex conditioning) is capable of dominating simple verbal conditioning. Thus, the acquisition of meaningful language undergoes two changes; it comes to be semantically distinctive rather than merely a trigger; attitudes, as reflected in words, organize and control behavior to the point where the attitudes can dominate the conditioning process.

Man's capacity to use words as "time binding"—Only man can talk about other places and times and project his listeners backward or forward in space or time. This quality is related to man's ability to use words propositionally and represents another aspect of the discontinuity of human language.

Man's capacity to use words to transmit purpose and understand cause and effect—Man's ability to develop and communicate expectancies as well as his capacity to understand cause and effect relations through the medium of language demonstrates yet another phylogenetic discontinuity.

While no reference has been made to specify the mechanisms underlying the discontinuous nature of symbolic language, the functional description indicates that different species on the phylogenetic scale operate at different levels of behavior modifiability. An important outcome of man's acquisi-

tion of symbolic language is that this discontinuity makes evolution in some ways self-modifying. Man has become continually more dependent on symbolic language for survival via his culture, rather than on his gene pool. Culture has become the chief instrument in survival, and its techniques of transmission have been accorded the highest possible order. Symbolic language plays a large role in the transmission of culture, and thus an important role in man's future adaptive potential.

Speculations Regarding the Neurophysiological Mechanisms Mediating Symbolic Language

While it is impossible to specify the exact mechanisms related to the acquisition of symbolic language, it appears that the central nervous system is involved. An evaluation of phylogenetic facts indicates that the cerebral cortex is chiefly responsible for the plasticity which characterizes the behavior of higher organisms. As the association areas of the cortex increase in relative size, more complex learning and less dependence on external stimulation are demonstrated. On the basis of man's proportionally larger cortex, one can attribute to it the function of symbolic language.

On the basis of evolutionary principles, further extrapolations regarding the neurosensorimotor mechanisms mediating symbolic language in the human cortex may be generated. In analyzing the task of language development, an integration between visual and auditory modalities would appear to be necessary in acquiring the capacity to recognize verbal labels. The child must see the object and hear it named to make an association. Even if a child's capacity for verbal recognition (receptive language) is best explained in terms of mediation proc-

esses, the necessary condition for this recognition is still intersensory liaisons. Expressive language would logically require further elaboration of an intersensory hierarchy, since kinesthetic tactile and auditory senses must be combined with motoric functions. In addition, intersensory equivalences would seem to be involved.

It is postulated that salient phylogenetic changes in the structure of the human cortex (growth, convolutions, and differentiation) have contributed to increased capacity for cortical inhibition and for intersensory integration.

Cortical inhibition seems to isolate specific stimulus events in the environment by blocking off other potential stimulus events, thereby contributing to the establishment of the child's effective environment. It can be considered a facilitative factor in focusing the child's attention on specific stimuli by reducing the potential excitation of other stimulus events. Cortical inhibition then is an active process which limits the effective environment under certain conditions. Other determinants of the child's effective environment are a shift in loci of the sensory hierarchy, and an increase in the sensory integration networks with their capacity to establish functional equivalences between the sensory modalities. These two capacities increase the range of the effective environment. This simultaneous restriction and expansion of the child's effective environment during development is a function of increased cortical organization which processes information as a "selective integration mechanism." Selective integration mechanisms increasingly control the stimulus inputs and behavioral outputs during the course of development.

It is further postulated that not only are cortical inhibition and inter-

sensory equivalences a part of the "selective-integration mechanism" system but that the interrelationship between cortical inhibition and intersensory equivalences (a cortical selective integration system) are highly influential in the development of symbolic language. The system of symbolic language is a process of cortical selective intergration in which infinite cell combinations are sequenced and hierarchically ordered. The complex combination of cortical cells (cell assemblies and phase sequences) is in part determined by the cortical selective integration system. This system helps establish the effective environment and processes sensory information. The cortical selective integration system (the combined effects of cortical inhibition and a network of intersensory equivalences) accounts for the properties of symbolic language in four ways:

Propositional use of words—The child's capacity to order words according to grammatical rules is explained by the process of observational learning through modeling and the concomitant acquisition of hierarchical orders of cell combinations. The resulting internal hierarchical structures are the grammatical rules which determine overt speech. This grammar is assumed to be "learned," rather than innate. The only innate attribute is the possession of a human cortex.

Capacity to use words meaningfully—The hierarchical order of differentiated cell combinations related to continual acquisition of new cell connections accounts for the concept of meaning. Cortical inhibition helps explain how semantic (meaningful) language becomes capable of controlling action organization.

Capacity to use words to bind time—Man's capacity to bind time

with words is accounted for by S-S learning in a temporal sequence. Cortical inhibition gives the child the experience of delay, which is a necessary condition for the experience of time. Thus, sequential S-S learning over time in combination with the child's experience of delay via cortical inhibition, results in the time-binding property of language.

Man's capacity to use words to indicate purpose—This capacity is explained by S-S learning (sensory and intersensory) in conjunction with cortical inhibition. Cortical inhibition isolates certain stimulus properties in the environment and previous S-S learning (sensory and intersensory) has established cell combinations which lead to expectations or anticipatory language behavior. This capacity is a function of the cortical selective integration system. When hierarchies of cell combinations are developed, this linguistic anticipatory behavior evolves into an ability to understand cause and effect relations.

While other cortical factors in the neurosensorimotor network are important in the development of symbolic language, these will not be examined in detail. The existence of these cortical qualities do raise important questions regarding the processes involved. What accounts for cortical dominance? What role does dominance play in the development of symbolic language? What accounts for the fact that the left hemisphere is dominant for language in almost all right-handed persons as well as a majority of left-handed persons? Are structural factors involved? To what degree?

While the problem of localization remains a puzzle, evidence indicates that in specific lobes, definite but generalized language functions are operative. Are there any evolutionary trends which account for this factor? In further inquiry it would be important to ascertain how emotional and motivational variables are related to the acquisition of symbolic language. What part do emotional and motivational variables play in the "cortical selective integrative" mechanism which is postulated in this paper to mediate language?

Implications of Evolutionary Theory on the Use of Behavior Modification Techniques

If it is true that man has a unique behavioral capacity for using symbolic language which distinguishes him from organisms lower on the phylogenetic scale, then this higher level of organization should be reflected in psychological approaches to human disabilities. In light of man's phylogenetic uniqueness within evolutionary theory, the vogue of using behavior modification techniques is limited. For example in education, while the early acquisition of expressive language is probably facilitated by operant techniques and connotative meaning established by classical conditioning, reliance on these techniques could restrict the child's effective environment, and avoid the necessary experiences for development of symbolic language. While it is recognized that the use of behavior modification techniques have a role in applied situations, more research into the theoretical issues involved is important for the long-term goals of psychology.

Condensed with permission from the *Journal of Communication*, 23(2):169-186, 1973. Copyright 1973 by the International Communication Association. Reprints of original article from James E. Goggin, Ph.D., Department of Psychiatry, Texas Tech University School of Medicine, P.O. Box 4569, Lubbock, Tex. 79409

Social System Psychotherapy

E. Mansell Pattison

This paper describes the emerging concept of social system psychotherapy, also variously termed network therapy, ecological therapy, and general systems therapy. Although seemingly a radical departure from traditional modes of psychotherapy, social system therapy is the result of evolutionary steps in the elaboration of psychotherapeutic intervention. We need a new conceptual model of psychotherapy, which may be termed the "open" model of treatment. The attempt to conceptualize the progression of intervention techniques under the conventional "closed" model produces serious strains, whereas the open model may provide a more adequate conceptual fit.

Clinical Development

Psychotherapy first emerged within the medical model of the 19th century concept of disease—an affliction of an individual, an affliction that required treatment of that individual. Disease was an individual affair, and so became psychotherapy.

The first evolutionary step occurred around 1920. The child guidance movement began to flourish with the inclusion of the parents of the "sick" child in the therapeutic enterprise. The parents, however, were not conceptualized as "patients" or involved in "treatment."

The second step was the development of group psychotherapy in the 1930's, which was still treatment of a person in a group. It was several decades before a thoroughgoing conceptual shift was made to the concept of treatment of all persons simultaneously by the group.

The third step came with the intro-

duction of family therapy—begun gingerly in the 1940's and reaching real visibility in the late 1950's—where it was no longer clear who was the patient. The fact that participants were intimately related to each other provided a challenge to traditional ideas of the one-to-one model, such as the development of transference, regression, and lack of destructive feedback. Family therapy was not just group therapy with a family group, but perhaps the introduction of a therapeutic technique *sui generis*.

The fourth step in the early 1960's produced further seeming confusion. Clinicians began to organize multiple families into one group for therapeutic purposes. A similar mix was produced in married couples' group psychotherapy in which four to six married couples met together as a group. These therapeutic situations involved persons who were related in real life, plus others who were totally unrelated.

The fifth step in the mid-1960's centered on the development of home-visit treatment programs, where the mental health professional went into the home of the "sick" person to treat him and to work with his family. This was close to the one-to-one model, but even the shift in setting raised conceptual issues. Friends, relatives, neighbors, would occasionally be included in the family sessions because of happenstance, invitation by the family, or even specifically invited in by the therapist. Other therapists have lived in the homes of families in treatment or made extensive home visits where they participated in various family functions that included friends, relatives, and visitors.

The sixth step has been to formalize contacts and relationships between family members and nonfamily members—to include in the psychotherapeutic situation any number of persons who are related by either kinship, friendship, functional relationship, or community residence. This social network of relationships has been made the focus of the psychotherapy, and the therapy of the patient is achieved via change in his social system.

Theoretical Development

Psychotherapy was born in an intellectual era in which perhaps only a one-to-one model could have been built. By the 1920's social scientists began to study "natural groups" in society which gave rise to social welfare and social action programs. Yet, because specific people were not identified as "sick," these types of intervention were not seen as having personal therapeutic potential.

Then in the 1930's Kurt Lewin formulated his field theory which asserted that human behavior cannot be adequately conceptualized apart from ongoing human relationships. Multiple-person therapy may be seen as an application of Lewinian field theory. Because a person's social field significantly influences behavior, it can be altered to be of therapeutic benefit. However, "social field" is an impersonal concept, and its effects do not derive from its members' personalities or relationships; rather it is the sociologic structure of the field that determines its impact.

When, however, the focus of clinical concern shifted to families and persons linked together by their instrumental and affective relationships, we observe a more complex sociodynamic—a "social network." The effects of these linkages combine with the

effects of sociologic group function. What we have observed in clinical work over the past 30 years is a stepwise recognition of the social network in which the patient is embedded, moving from parents and child to nuclear family to extended family, to finally a complex social network that may include nuclear family, various kin, friends who have "affective" links, and persons like ministers and bosses who have "instrumental" links.

In the one-to-one "closed" model the assumption is made that psychotherapy will effect change in the individual that will enable him to behave differently in his social fields and social networks. Whereas, in the multiple-person "open" model we assume that by tightening and loosening the affective and instrumental linkages that exist in the network, different options for behavior will be presented to the patient, and consequently the patient will behave differently. Thus the focus of psychotherapy in the open model is to change the interactional characteristics of the social network. This model explicitly assumes that human behavior is significantly determined by the characteristics of the social field or social network, hence the therapeutic emphasis lies here, rather than on changing the individual per se.

The importance of family relations in the genesis of disturbed behavior in one member of the family has been extensively discussed in the family therapy literature. The family dynamics involved, however, may not just be the dynamics of the nuclear family. In urban settings, for example, the kinship system consists not of blood kin but of affective kin—friends, neighbors, and associates in informal social groups assume the functions of blood kin in an affective and instrumental network of relationships. One

research group observed communication of maladaptive behavior over multigenerations, in one instance over five generations. They conclude that the focus of therapeutic intervention must aim at this ongoing social system:

"When the individual comes to a therapist for help, we assume that he is admitting the failure of his group as an effective milieu in which to find the solution he seeks [to his problems]. Our data suggest that the individual seeking help frequently approaches the therapist to protest against the ineffectiveness of the group to which he belongs."

Several other studies pointed to the need for diagnoses and treatment that extend beyond the individual and his family. In one study, families applying for treatment at several family service agencies were found to have fewer memberships in voluntary associations, fewer friendships with relatives, and fewer relations living in the same community than normal families. The kin social network as the focus of psychotherapy was suggested as far back as 1962:

"Well" families were seen to have achieved resolution of the usual problems of ties to extended kin and therefore had the resources of the kin available, whereas "disturbed" families had been unable to resolve conflicts with the extended kin outside the nuclear family. Pathologic families used the extended families to shore up group defenses, to provide a stimuli for conflict, as a screen for the projection of nuclear family conflict, and as competing objects of support.

Meanwhile, a number of family sociologists had suggested the modified extended family system as a potential mental health resource. Therapeutic intervention will depend on the clinician's assessment of the type of kin-

ship system which exists for a given family, with use of therapeutic intervention techniques applicable to that type of kinship network. Slum families in New York and Philadelphia, for example, were found to have a variety of subtypes of family and kin systems, none of which are like the typical nuclear family treated by upper middle-class American psychotherapists and clinics. The researchers had to devise strikingly different methods of therapeutic intervention with these family and kin systems, namely a treatment program involving the functional kinship living unit.

Examples of Other Therapeutic Systems Involving the Social System

The same progression occurring in psychotherapy has occurred in three other systems of intervention, in the same general pattern.

The first system involves the mental hospital. Here the therapeutic approach to the patient began with one-to-one intensive psychotherapy of a patient who lived on a ward. Then attempts were made to humanize ward living experiences with open-door policies, social activities, and so forth—the creation of a therapeutic milieu. Next came the introduction of group discussion among patients and patient self-government programs. Following this came a variety of intensive ward or group psychotherapy programs. And finally came the concept of milieu therapy, that is, the deliberate management of the entire social system of the hospital in which the psychotherapist does not treat a specific patient, but focuses on directing the social system so that it will operate in a therapeutic fashion.

The second system is the community mental health system. Early attempts at intervention in the community were based on the

identification of individual persons in distress. Welfare agencies, for example, attempted to help persons with rent, child-care, clothing, food, and other matters. The second step, the group-work approach, was the development of local groups to deal with common problems and to assist natural community groups. And the final step has been to use community mental health programs to launch broad-scale social-action programs aimed at changing basic social programs, social policies, social organizations of an entire community.

The third system is the educational-organizational system, the prototype being the programs of the National Training Laboratories. Here, too, intervention began with the individual and has gradually shifted to the social system. Individuals and small groups who went through NTL's sensitivity training experienced change, but it was quickly vitiated when they returned to the larger organization. Thus, NTL developed programs aimed at producing changes in the structure of the entire organization.

The Open Model of Psychotherapy and the Closed Model of Psychotherapy

The closed and open models of psychotherapy do not compete, but rather are complementary, for each is addressed to different psychotherapeutic goals.

The open model of psychotherapy is actually the oldest. It is the model of the shaman, the primitive healer, the folk healer. One student of primitive healing procedures has suggested that psychotherapy is a public affair—hence my use of the label "open" psychotherapy. In primitive society, if a member became "sick," it was matter for public concern, for a necessary worker was lost to the small society. There was little margin for

functionless members of the community. When a person became emotionally "ill," there was a generally accepted societal explanation for the cause of the illness. Everyone in the small society knew the shaman's healing procedures, and they actually participated in them. The goal of the healing was to restore the ill person to his usual mode of operation and function in the social system. There was no questioning of the values or patterns of function of the social system.

In contrast, the goal of the "closed" model of psychotherapy is not to help the patient return to function in his social system in the same old way. Rather it is to help the patient to examine his social system, examine his pattern of function in his social system, and perhaps function in a different social system altogether.

Now the closed model could only come into existence in the face of several other social considerations. First, the person was not immediately required for the society to function, he could remain dysfunctional for extended periods of time. Second, the person had available to him a variety of value systems from which he could choose. And third, the person had available alternative social systems into which he could move.

In the open model, privacy is antitherapeutic, for it is the public pressure, response, and support that enable the person to move rapidly back into his accustomed social function. In the closed model privacy is paramount, for it is the privacy which enables the person to achieve distance and perspective on his behavior in his social system and to explore alternatives.

Thus we can see that if our psychotherapeutic goal is rapid return of a "sick" person to accustomed social function then we may choose the

open model to capitalize on the "public" that comprise the patient's social system. This is social system therapy. It is a public therapy. The difference between the primitive shaman and the social system "open" model psychotherapist is that the psychotherapist may aim at changing some characteristics of the social system, not merely using the social system as does the primitive shaman.

If our psychotherapeutic goal is change of personality with the concomitant development of capacity to choose among alternative social systems, then the closed model of psychotherapy in the traditional psychoanalytic sense becomes the model of choice.

The advantage of having two models of psychotherapy is that the psychotherapist may be freed from the attempt to make very different types of therapeutic interventions fit into a model that is inappropriate and hence experience conflict over technical, social, and ethical issues. Further, the psychotherapist can clearly take advantage of the strengths of either model as indicated, instead of compromising one model to achieve the goal of the other model.

A Case Example of Social System Psychotherapy

An 18-year-old single, white girl, who had been attracted to the hippie movement, was dating a boy with similar interests. Her parents openly expressed their dislike of him, and when the couple took off for Wyoming, both sets of parents disappeared. Later in a motorcycle accident the boy was killed instantly and the girl sustained multiple injuries.

Several weeks later, during her treatment for these injuries on the orthopedic ward of a university hospital, the girl took an overdose of sleep-

ing medication, which she had been accumulating surreptitiously. When questioned she said, "It didn't matter, I don't want to live. Don't bother me. I want to join my boyfriend, my husband to be."

About an hour before she took the overdose, the girl had learned that the orthopedic resident with whom she had formed the one relationship that seemed meaningful to her, was himself involved in an accident while on his way to change the traction on her leg. (The physician's accident elicited the same reaction as her boyfriend's death, the physician having been ascribed a transference-determined role—i.e., she and he had a relationship that existed in opposition to the rest of the world.)

The next day the girl became increasingly uncooperative and refused to talk to a psychiatric resident. When she became more lethargic, the staff thought she was taking more pills presumably brought in by her hippie friends. She was placed in an isolation room and forbidden visitors. Her mental condition seemed to deteriorate.

I interviewed her late on the 2nd day after the suicide attempt. Although she was resolutely negativistic toward anyone she perceived to be part of the establishment, she did like to talk to the Presbyterian minister from her family's church. She was angry at not being able to visit with her friends, several of whom were socially involved in the same church.

At this point, the psychiatric resident and I explored the girl's social network both within the hospital and outside it. We found that: The girl was the scapegoat for interstaff conflict on the ward; doctors and nurses were angry with each other for failing to establish rapport with her, and

both groups blamed her for creating this problem. The girl was the scapegoat for conflict between her own and the dead boy's family, who were trying to see her without seeing each other. Each set of parents blamed the other parents for the fate of their child, but all parents blamed the girl for the interfamily conflict. Although the minister and the girl's friends wanted to talk with her, they felt they should not interfere with parents and staff, and they feared they might precipitate further depression and another suicide attempt. Medical and nursing staff had no communication with either set of parents, the minister, or the friends. Mutual suspicion existed between the staff and the girl's family and friends.

We defined the focus of therapeutic intervention as the patient's social network, which was characterized by dysfunctional scapegoating and multiple blockades. We told the girl that we would not conduct any psychiatric treatment with her, but that the psychiatric resident would be visiting with her family, friends, and staff. Then, we held a meeting with the minister and friends where the girl's problems were discussed and a program of daily visitation arranged. Next, several meetings were held with doctors and nurses separately and together during which the interstaff conflict was aired and concrete plans for care were devised. Meetings were also held between the staff and the two sets of parents, the minister, and friends; in separate sessions, roles were defined; in several joint sessions,

mutual hostilities and projections were explored.

All these network contacts were made within several days. Within the 1st week the girl became brighter, more communicative, less depressed. She became demanding and engaged in very active, albeit hostile, interactions with many people. Her clinical depression rapidly cleared, and she was able to go home on a weekend pass, the weekend being uneventful. A subsequent surgery and hospital stay was also uneventful, and the patient was considered to be a "good" patient during her second hospitalization. Subsequent followup revealed no recurrence of her clinical depression and a satisfactory convalescence.

In summary, an 18-year-old girl with a severe clinical depression was treated indirectly by working directly with the subsets of her social network. It was found that the girl was an emotional scapegoat for several subgroups in her social network. In part her depression and suicidal behavior may be seen as an acting out of these network conflicts. The resources immediately available to her in her social network were initially blocked. By resolving these network blockades we were able to afford the girl a variety of meaningful human relationships which she could accept and use. By continuing consultation with significant persons in her social network it was possible to help them to help the patient with her griefwork, a task that appeared impossible for the psychiatrist to undertake directly with the patient.

Condensed with permission from the *American Journal of Psychotherapy*, 17(3):396-409, 1973. Copyright 1973 by the Association for the Advancement of Psychotherapy. Reprints of original article from E. Mansell Pattison, M.D., Associate Professor and Vice Chairman, Department of Psychiatry and Human Behavior, University of California at Irvine, and Deputy Director, Training, Orange County Department of Mental Health, Orange County Medical Center, 101 South Manchester Avenue, Orange, Calif. 92668

The Actor's Identity Crises (Postanalytic Reflections of an Actress)

Janice Rule

When the creative investment is deep, so that the preconscious and unconscious, as well as the conscious, mind are involved in the work, the actor rarely leaves his role when he leaves the theater or the sound stage. That is not to say that the actor consciously takes the role with him or consciously acts the role in private life. It would wring the artist dry if he attempted to use his professional skills 18 hours a day. But there are unconscious problems that arise in the acting profession, due in large part to the psychological work of the actor.

The Psychological Work of the Actor

In order to create a character, the actor needs the ability to utilize both his reasonable, observing, analyzing self and his irrational, subjective, experiencing self, and he must continually oscillate between them at a given moment in time and space. He is required to walk a thin line, a comparatively rigid line that must not appear rigid. He must perform what has been rehearsed, but allow himself the freedom to experience new thoughts, feelings, and responses to his fellow actors and the audience. He must create the illusion of the first time every night.

In the early stages of rehearsal, it is important for the director to set up an atmosphere that allows the actor, without fear and guilt, to regress into the subjective, irrational, and experiencing ego necessary to the work. This is not simple. Actors do not simply push their finely computerized comedy or tragedy buttons. Rigid over-preparation cuts out the actor's use of fellow actors, stage setting, and

ability to take direction from the director. From whatever source it may originate—the director, personal insecurity, phobias—fearful submissiveness is the enemy of all creative performers for it crushes creativity. The good director encourages the actor to dive down as far as possible for the unconscious inner life of the character. The fusion of conscious and unconscious thoughts, conscious and unconscious feelings, and fantasies about the character gives the actor the potential for unique rather than the merely clever interpretation.

The technical demands of acting are more easily taught and performed than the deeper creative contribution that the talented actor can bring to a characterization. Whether aware or unaware, the actor digs deeply into his own emotional and imaginative life. He goes into those areas of himself that have even the slightest relationship to the character. He must in a sense free associate along with the writer and, like a good analyst and a good analytic patient, not be afraid of what it will bring up in himself. The ability to empathize with his character is essential for the actor. He does not sacrifice his own total identity when playing a character different from himself. He does repress or suppress *parts* of his identity while exaggerating those characteristics within himself most like the characteristics needed for the role. He must identify so deeply that he begins to love a character whom under objective circumstances he might find offensive; thus he gives up much of his own identity and temporarily suspends his own ego boundaries.

If, for instance, an actor is playing a character who walks out on his family, the actor is inclined to bring to the surface all his repressed dislikes for his own family in his private life, to the point of exaggerating them to bigger-than-life size.

Another danger lies in being applauded every night for certain character traits, values, and attitudes that make it nigh on irresistible not to carry them over into private life. However, it is not only the applause but the "living oneself into the part" for weeks on end that makes the separation of stage and homelife extremely difficult.

The actor seems to fluctuate on the border of reality and unreality. He lives on stage as if he were really living his own life and experiencing his own feelings, opinions, and views. In everyday life this amalgamation of the actor and the character he is playing would suggest various degrees of psychopathology, but, when confined to work, this state of being in the actor produces magnificence. It is only when the actor is psychologically compelled to carry this into his private life that it is an aberration. I cannot stress strongly enough that this sort of identity fragmentation, fusion, and confusion goes on unconsciously in the actor. For example:

Edward—Age 30, Edward was optimistic about his coming marriage because his fiancee knew the problems from her own experience and had no illusions about the "glamour" of the profession. Unexpectedly, the fiancee was forced to be away for 3 months. When she returned, she found him very cynical, using phrases that she had never heard him use before. His attitude toward her had changed drastically; he seemed suspicious of her reasons for wanting to marry him, and she came to the conclusion that

he no longer wanted the marriage. One afternoon, by chance, she read the play Edward had been doing while she was away. Much to her surprise and relief, there in the play were all the strange new phrases and the cynical attitudes. There in the play was the new Edward, who lingered around for a while and then disappeared.

Edward married his fiancee. Next he played a warm, courageous, compassionate man who loved life, books, paintings, and music. His wife reported an idyllic, if somewhat unreal, life during this time.

Edward's next role was that of a military man in Europe who indulges in a desperate bender with his buddies, an attempt to live fully their last days before possible death. Edward's identification with the character led him back into an old problem. He would spend most afternoons and 3 to 4 evenings a week with "the boys"; this behavior on his part uncovered a deep-seated fear of abandonment in his wife. The filming took 6 months, and by the end of that time his wife was ready for a divorce. At the end of the filming, with therapeutic intervention he was able to look at those past months objectively and correct the problem.

This incident illustrates how the actor takes the character out of the theater with him, but not in such an extreme way that it cannot be reversed by insight.

Francoise—Francoise was one of the great dramatic actresses of her day. She delved into any part of the character's past that might in any way affect the character at the time of the play. She would fantasize a complete biography of her character and of those characters in the play who affected her character. Her scenes were full of life, deep, and

imaginative, and her big emotional scenes were astoundingly consistent.

Each time Francoise began work on a new play, her personal life was suddenly in chaos. It finally became clear that Francoise felt she needed this climate of real personal chaos to produce those great emotional scenes on the stage. In the span of five plays, she divorced two husbands and drove many lovers to leave her—in time to feed the inner torment that she, as an artist, needed to fulfill the extraordinary standards she had set for herself.

This was not lack of imagination on Francoise's part, but an example of severe conflicts. I would guess that she was unable to deal with the painful feelings of broken relationships in her past, probably dating back to childhood. She then had to create new rejections that she could control and use.

At one point she was asked to play a sweet, dumb, rather sexy dancer. There was no prerehearsal chaos; she became optimistic, bright, cheery, and adorable. These were not the qualities generally attributed to Francoise, the private person; she was stubborn, perceptive, serious, and, in turn, compassionate and cruelly honest with her friends.

Francoise had had a weight problem. Yet, without dieting, she enjoyed a slim figure for the entire run of the play. Apparently she intuitively grasped the relation between sadness, emotional hunger, and eating—the character's joyousness gave her the feeling of being satisfied that goes hand in hand with elation.

These identity crises do not occur when the actor is involved in dull and uninteresting material; he is willing then to leave the character in the theater or on the sound stage. With the 6-day shooting schedule of most television films, there is no time for

the actor to live himself into the part.

Another example of the actor's identity crisis occurs when the role reinforces a primarily neurotic conflict and when the regression that the good actor seeks becomes a source of such anxiety that he is unable to tolerate it. But I do not want to give the impression that the actor's life is one of sustained or repeated identity crises. Creating a role can provide a way to get relief from the effects of painful past experiences and can also be a means of reliving a happy time in the past.

Not only does the actor identify with the role he is playing, but the people around the actor who don't know him well tend to treat him as the character he is playing. Thus, the hazards that the actor struggles with internally are reinforced by the external world. When I played my first whore, the crew began to whistle when I walked on the set, talk to me in a kind of buddy-buddy slang, and a sweet old sound man took me into a corner and told me a very dirty, vulgar story—even though in the past they had treated me with a distant respect. Playing an alcoholic invariably elicits offers of a good strong belt or advice that a cold beer midmorning is the best way to straighten up.

The Movie Star

The role the actor is playing replaces the real self to the outside world. If his screen image is the bad guy or the rake, his escapades in life are exploited; if the on-screen image is the nice guy, the studio publicity department goes to great pains to shelter the star from any adverse publicity to the extent of not allowing a photograph to be taken with a cigarette or drink in hand. We actors who should know better often end up playing audience for each other; it is not

uncommon for costars to fall in love in the course of a production, although more often than not, it is the result of the inability of each party to separate the real person from the fictional character. This problem is similar to transference in the psychoanalytic situation and, since neither actor is able to be the "restrained doctor," transference and countertransference run rampant.

An eminent psychoanalyst implied that the difference between the psychological makeup of the movie star and the fine actor was similar to the difference between the borderline psychotic and the neurotic. He said that he would never again attempt the analysis of movie stars because they are not amenable to psychoanalytic treatment, and they require much more supportive and directive forms of therapy. Even if the star himself is strongly motivated to change, the parasites and exploiters living off the successful creature prefer the status quo. The movie star often seeks uninterrupted narcissistic supplies and becomes as inaccessible to analysis as the alcoholic or drug addict.

Childlike openness, emotional availability, vulnerability, and freedom to imagine, to pretend, and to believe are necessary qualities for the actor. Such qualities should not be confused with childishness, lack of discipline, and self-indulgence; tantrums are a far cry from temperament.

From my experience and in discussions with fellow actors, I have found that dreams during the rehearsal period frequently contain elements of the identity conflicts produced—struggles with the conscious, preconscious, and unconscious meanings which the play stirs up. In order to perform convincingly, the actress must make at least a partial identification with the

stage character and this identification leads to multiple identities, or blurred identities, or blendings of identity, or identity crises and confusions. The resiliency of the actress in terms of her ability to give up her identity temporarily and yet simultaneously maintain part of her professional realistic identity is vital. This requires a mature and relatively healthy set of ego functions and great variety of relatedness to people on the outside and to one's various self-images.

A Proposal

Perhaps analysis as part of training would make the actor aware of general pitfalls and give him insight into his own neurotic tendencies that often give him no choice but to act out, off the stage, those characters who intrude upon his own personal problems.

I would like to propose that an investigation be made of the possibilities inherent in early analysis of the actor—a sort of preventative therapeutic approach. This need not be deep classical analysis. It could be briefer and less thorough, depending on the individual's requirements. The fear of becoming a well-adjusted vegetable from analysis, fashionable in theatrical circles, is, in my opinion, without foundation.

It seems that actors have a more stable identity when actually performing or rehearsing well—but what kind of identity? To feel that one is someone only when playing a role is second-rate living. When an actor accepts a life with no freedom of choice and no control over his own destiny, it means that he lives only when some producer or director allows him to live by giving him a role, an identity, somebody to be.

I don't feel from my own analysis that I have been divested of creative

imagination or emotional power. On the contrary, these forces are stronger in my work; they are freer and contain more understanding of human complexity. Self-esteem, based more internally than externally, and a growing faith in my own perceptions have lessened the chances of undue influence by untalented directors, hostile fellow actors, or destructive acting teachers.

It would certainly be better to have analytic psychotherapy, analysis, and professionally run encounter groups available to students in need. Additionally, I would recommend that courses on the psychological and social dynamics of the theater be a standard part of the acting school curriculum. Another more practical possibility would be the training of psychologically minded actors to help other actors in the way that Synanon and Phoenix House have trained and use former drug addicts to help addicts.

The analytic process should, I think, be modified to some extent when the actor is in a creative phase. Just as with neurotics, when the unconscious motivations for the neurotic behavior are unveiled to the conscious mind and worked through, the behavior is "deromanticized" and the symptoms of acting out, once held onto with such tenacity, disappear. This is so to some extent with acting.

There is, of course, a difference between self-awareness and self-consciousness, a difference between acting

and acting-out. With an actor creating a role, there is a delicate balance.

I did find when I was in analysis, during a rehearsal period of a particularly emotional role, that it was difficult to keep enough of the material I was using for the role out of the analysis. Actors outside analysis are always careful of overintellectualizing moments that are working well—partly because of the fun of secrets and the need to hide behind the character, but, more importantly, to keep the depth and dimension that the pre-conscious and unconscious levels bring to the work. Perhaps a kind of face-to-face therapy at those times would be more effective, the analyst's main function being to help the actor minimize acting out the character in real life.

There are many areas in which the actor may be blocked due to unresolved neurotic problems. He may deal with fellow actors or directors by overreacting, unable to be objective, in a manner predetermined by some past relationship. The analyst can be immensely helpful in bringing to light the reasons for these difficulties, thereby aiding the actor to set up a more positive work atmosphere for himself.

I realize that supportive therapy and reassurance can be misused in the analytic situation. It seems to me that actors, particularly when they are working, require analysts whose first commitment is not to their theory but to the needs of the patient.

Condensed with permission from the *International Journal of Psychoanalytic Psychotherapy*, 2(1):51-76, 1973. Copyright 1973 by Jason Aronson, Inc. Reprints of original article from Ms. Janice Rule, c/o J. Julien, 9 East 41st Street, New York, N.Y. 10017

Problems and Methods in Psychoanalytic Research

Norman Tabachnick

The last 2 decades have witnessed significant developments in psychoanalytic research methods. As these changes take place, it is important to evaluate them from the standpoint of their capability to produce valid results. Their proponents claim that they add to validity. Critics wonder if the claims of increased validity are justified. Indeed, a more serious question is raised, that is, that the new methods depart so greatly from what is essential to psychoanalytic research that they are incapable of developing meaningful data.

In this paper I will act as a proponent of some new methods. Let us begin with my definition of psychoanalytic research. Psychoanalytic research is planned from a psychoanalytic theoretical viewpoint. Its purpose is to elucidate psychoanalytic theory in abstract or applied forms. The techniques may vary from one end of the methodological continuum (in which there is adherence to traditional psychoanalytic method) to the other (where there may be little adherence). Let me identify the three research problems on which I wish to focus. They are the issues of reliability of the data of research, bias in the psychoanalytic researcher, and the utilization of nonpatients as subjects of research.

The Traditional Model of Psychoanalytic Research

In outline, a "traditional" model consists of the impressions made on the treating psychoanalyst by the patient who comes to him to be treated, the forming of various of these impressions into hypotheses calculated to explain psychological relationships

in the patient, and the testing of these hypotheses through repeated observations on the patient.

This model differs little, if at all, from the model of psychoanalytic treatment. How did it happen that in psychoanalysis, treatment and research models have come to be nearly identical? Here are some of the important factors:

Freud's greatness—Almost all psychoanalysts consider Freud's contributions to the founding and development of psychoanalysis to have been brilliant. When a group of workers are impressed by one man, there is a strong possibility that they will continue to utilize his methods. Freud emphasized clinical research in his development of psychoanalytic theory. Had Freud's attributes, training, or opportunities been different, he might have chosen other approaches for his research. The methods he used, although valuable in providing a structure for his thinking, do not necessarily represent the best or only methods which can be used.

The healing tradition in psychoanalysis—Several factors have contributed to a marriage of psychoanalysis and "healing," "helping," or "treating" people. This marriage occurred despite Freud's belief that psychoanalysis had more to offer in terms of explanation than cure, and despite similar opinion and data which raise questions about the therapeutic efficacy of psychoanalysis. Psychoanalysis began in the context of Freud's attempts to help people with "mental illness." Most of his early coworkers did the same. The majority of individuals who have become serious students of psychoanalysis have contin-

ued this tradition. Likewise, there has been a demand, from individually troubled persons and society at large, for psychoanalytic treatment. Psychoanalysts have accepted roles as therapists. They do this not only from humane motivation. An additional important reason is that as psychoanalytic theory and research have developed, it has seemed valuable to study individuals over long periods of time. The "emotionally disturbed" patient is someone who, motivated by his desire for relief of distress, is willing to undergo the responsibilities of a lengthy analysis.

Psychoanalytic isolation from other scientific research methods—All psychoanalysts know the isolation which the psychoanalytic movement endured. At the beginning, there was a mutually imposed isolation between psychoanalysis and much of the rest of the scientific community. Opinions differ as to the value of this isolation, and indeed, the isolation is a complex and multifaceted problem. It seems clear that without an interchange, without an awareness, often, of the existence of other research methods, there ensued a tendency to rely on the traditional model.

Once established, the traditional model of research tends to continue. This occurs for a number of reasons, some of which deserve respect and some of which do not. Much of value has been achieved using this model; since therapy is an important implementation of psychoanalytic theory, it is valuable to do some research in a treatment setting, and the traditional model does generate intriguing hypotheses.

Less valuable reasons include inertia and the possibility that holding on to an old way protects from problems, anxieties, and uncertainties associated with the development of new meth-

ods. There are important areas of deficiency involved in the traditional model.

Methods of testing hypotheses are limited. One can observe sequential and other relationships between two or more phenomena, say, an interpretation and a thought or action of the patient. One can infer some theoretical linking of the two, but the possibility that other factors may be involved can only be poorly tested.

There are questions regarding reliability and interviewer bias. Utilizing only "patients" or "emotionally disturbed" people to obtain material upon which to base a general psychology is questionable. We can conclude that new methods of psychoanalytic research are needed to supplement the traditional model.

The Comparison Group in Psychoanalysis

Some might question whether a comparison group is possible. Although there is no disagreement that any particular phenomenon is multiply determined, it does not follow that comparison groups cannot be utilized.

It is true that the questions being investigated must be asked in a way which can point up the differences between comparison groups. Expression of results in a statistical manner with the theoretical underpinning of probability theory is one method of accomplishing this end.

It is also valuable to ask a small number of questions which, answered convincingly, add something to our store of knowledge rather than attempting to build elaborate theories from relatively few data. For example, inference that a death instinct exists because various groups of people die (suicide, accidents, addicts) is more inferential and less valuable than the finding that addicts and ac-

cident victims resemble, in a number of ways, suicide attempters. If one can show that the addicts and accident victims are closer to suicide attempters than to a comparison group which represents the population as a whole, a valuable utilization of comparison groups has been achieved.

There are specific problems in the utilization of comparison groups: the reliability of data-gathering procedure and the problem of interviewer bias.

The Problem of Reliable Methodology

The essence of the reliability issue is: If two or more individuals listen to the same set of data, will they be able to answer certain questions in regard to that data in the same way? Suppose we want to find out whether people who have serious accidents can be characterized as similar to suicidal people in certain regards. If we have a reliable way of getting at this material, this would mean that every (or almost every) psychoanalyst using this method on the same patient would come up with the same conclusions.

Methods of constructing reliable methodologies for psychoanalytic investigations can be constructed. Let me give an example. In regard to hypotheses under investigation, we construct a schedule of issues. The analyst's task is to gather material to evaluate the issues using any interviewing techniques congenial to him. The interview is tape recorded.

We turn the tape recording over to other analysts who independently evaluate the issues. If there is a high degree of statistical agreement between the analysts, we conclude that we have a reliable method of investigation. If such agreement does not appear, then we study the tape recording, gather the opinions of the different analysts, and attempt to determine what prompted them to come

to their differing conclusions.

We then propose new questions which we hope will resolve the ambiguities, and utilize our revised methods in interviewing. The tape recordings and the testing by independent analysis continue until we have found a way of dealing with the data which gives us a high degree of agreement between raters.

At this juncture, an important issue must be raised. It might be agreed that following such a procedure would create a reliable interviewing method. However, in moving toward standardization, one moves away from a psychoanalytic technique which has been considered a cornerstone of psychoanalysis, namely, free association.

Suppose we are interested in evaluating the trait "impulsiveness." In the usual therapeutic analysis the decision as to its presence would be reached on the basis of the patient's actions and verbalizations occurring in a relatively undirected way over a period of time. The patient has "volunteered" the information upon which the conclusion is based. In our research method, on the other hand, unless a patient chooses to give copious information on "impulsiveness," we would find it necessary to direct him to this topic, and indeed, ask him specific questions.

So a criticism may be raised: "You are moving toward a reliable procedure, but in doing so, you are giving up so much that this research is not psychoanalytic." The first answer is that any research is psychoanalytic if it attempts to gather material bearing on a psychoanalytic theory.

However, the question that is raised as to whether this method is "psychoanalytic" is probably not directed toward the theoretical underpinning of the study. It stems from the impression that if free association is

not utilized, then important opportunities for observation and fitting together of diverse associations into a coherent pattern are lost, and that these lost opportunities are precisely those which characterize "psychoanalysis." To defend my position, I should like to reexamine the concept of free association from a number of standpoints. Freud's thought was that many patients have their minds so filled with conscious, acceptable concepts that it was difficult to get at their ways of thinking, feeling, and judging that were opposed to what was acceptable. However, it was these unacceptable attitudes which were felt to be crucial to the understanding of the patient's conflict. As one of a number of technical suggestions, it was suggested to the patient that he suspend his usual judgmental, morally determined ways of looking at things, suspend as much as possible inhibitions occasioned by shame, guilt, fear, or other deterring forces, and merely say whatever came into his mind. This was free association.

A difficulty that arises when one questions if free association is essential is that it has such an important and time-honored role in psychoanalysis. Adding to the importance of free association is its relationship to the discovery of resistance. Free association has been associated with the task of allowing derivatives of unconditioned stimulus content and affect to become evident to analyst and analysand.

To what degree and under what conditions is free association utilized in psychoanalytic therapy? From the beginning it was recognized that patients differed in the degree to which they could utilize free association. It was also noted that free association, even in the same patient, was a fluctuating matter, that is, there were some situations in which patients

could free associate easily while, in others, the same patients would show marked inhibition of free association.

Free association is only one of a number of methods utilized to increase the understanding of the patient's character. Interpretation of unconscious material and consciously correlating aspects of behavior and feeling are examples of other important methods. In much child analysis, free association is used little or not at all. Thus, it is questionable that "free association" is essential to therapeutic psychoanalysis. From the standpoint of psychoanalytic research, I do not feel that the use of free association is necessary.

Questions may be raised about other ingredients of the psychoanalytic situation in research settings. For example, can "transference" be utilized when the number of interviews is small and when they are highly structured? What about the unusual settings in which some researches take place? In our study we interviewed subjects in the four- and eight-patient wards of a general hospital. This was different from the quiet consultation room where most psychoanalyses have occurred. These (and related questions) are the issues which must be evaluated in deciding whether the new research methods can provide worthwhile data.

The Problem of Interviewer Bias

A valid criticism of psychoanalytic research is that each analytic researcher may have within him certain unconscious biases in regard to the hypotheses he is investigating. An analyst investigating accidents may believe that accident victims possess character traits of impulsivity to a greater degree than nonaccident people, and may well end up finding what he believes is going to be there.

How can this problem be dealt with? Ideally, it might be valuable if the analyst were unaware of certain information. Suppose accidents are being investigated. Assume that in addition to people who have been involved in accidents, there is provided a second group consisting of nonaccident people who are in the hospital following appendectomies. An ideal research design would give the analyst no information as to which interviewees have had accidents. However, because of the scope and nature of analytic work (one would not wish to instruct patients to hold back certain information from analysts), and also because many factors would give clues as to which patient had had an accident and which had had an appendectomy, such an ideal is impossible.

However, there are procedures which can be utilized. Let us assume that a group of interviewers is attempting to evaluate the hypotheses that individuals who are involved in near-fatal accidents manifest a greater degree of impulsiveness than individuals who have been involved in intermediate-degree accidents, and that this latter group have a greater degree of impulsiveness than a comparison group of individuals in the hospital for treatment of acute appendicitis. Let us further assume that each interviewer sees representatives from each of the three groups.

What happens if the results tend to support the hypothesis? Can we apply tests which would indicate whether the results were influenced by interviewer bias? There are a number of ways to do this.

If we have taken the precaution of tape recording the interviews, we can submit the recordings to an independent group of skilled judges. This group would be selected to investigate interviewer bias. They would have no

formal allegiance to the main hypotheses of the study; they might be kept ignorant of them.

There are indications of bias which this group of raters could deal with. They could form judgments on the degree of rapport between the interviewers and the subjects. They could judge such categories as warmth of the interviewer, and the interest and responsiveness of the subject. They could look into the matter of the length of the interview, make quantitative measures of interview time in regard to particular areas of interest. They might look at the number of "leading questions" asked by the interviewer.

The issue of interviewer bias has been raised in terms of its effects on research. However, this issue is of importance in therapeutic analyses also. We assume that analysts see what is really there in their analysands. We assume that their abilities to judge reality, their personal analyses, and their training have made them objective. We assume, but we ought to know.

Analytic Research with "Nonpatients"

A final issue has to do with the extension of psychoanalytic techniques to new types of subjects. Traditionally, the psychoanalyst has worked in a helper role; the knowledge which psychoanalysis has of the human psyche has come, for the most part, from observations in this kind of relationship. What would happen if psychoanalysts did utilize their psychoanalytic technique with other groups of people?

I feel that it is worthwhile to extend our efforts to nonpatient groups, first because any attempt to elicit knowledge from new sources may prove valuable and is worth a try, but also because the psychoanalytic obser-

vations and theories which have come from the study of the helper-patient relationship may be deficient. They may be deficient because they focus on "sick people" and "rich and privileged people."

There is a good deal of evidence from sociology, psychology, and psychoanalysis that each individual has the capacity to work within a number of different roles. One important role is the "sick role." If most of our observations and theories have come from observations of the helper-patient relationship, we may be seeing people operate in only one of their roles. Therefore, an intensive analytic look at people not functioning within this "sick" role would provide data about the many other roles and the opportunities to change from one role to another.

Most analytic patients come from special socioeconomic groups. Although some individuals may believe that what is psychologically true of individuals being analyzed would turn out to be true for all people, one must say that present knowledge does not justify this conclusion.

Although I can envision little opposition to an attempt to analytically interview or analyze nonpatients, the questions must be asked: "Would it work?" "Can you engage nonpatients in analytic relationships in which the traditional tools of psychoanalysis could be utilized?" "If they are not suffering, what motivation could induce them to endure analytic work for a sufficient period of time to yield results?"

Attention to the issue reveals that other motivations are available for analytic work. For example, if patients are paid for their efforts, they might be willing to put out some energy in return for this pay. Some individuals might be interested in helping research projects to search out the unknown. Others might feel that they would be willing to put out energy to see if they could improve their lives. A number of analysts already look upon this motivation as a good one for the "traditional" type of analytic patient. Exhibitionistic needs and voyeuristic needs (to look at oneself) might be utilized. Finally, certain individuals operating under strong impulses to please authority might feel that to cooperate with psychoanalysts would be useful or necessary.

The psychoanalytic method has been a challenging, attractive, and stimulating approach for the gathering of psychological knowledge. As in other sciences, the history of psychoanalysis has defined the directions and limitations of its research activities. From one standpoint, limitations which may be nonessential and accidental in terms of improving methods of psychoanalytic research are sometimes rationalized as if keeping them is essential for the continuance of analysis. It is appropriate to conclude that many limitations which have hampered the extension and broadening of psychoanalysis as a research tool can be eliminated.

Condensed with permission from the *Journal of the American Academy of Psychoanalysis*, 1(3):289-302, 1973. Copyright 1973 by John Wiley & Sons, Inc. Reprints of original article from Norman Tabachnick, M.D., Institute for Studies of Self-Destructive Behavior, 1041 S. Menlo, Los Angeles, Calif. 90006

The *Mental Health Digest* will cease publication with the December 1973 issue.

Changing priorities and needs have made the cancellation of the *Digest* necessary at this time, but the new Alcohol, Drug Abuse, and Mental Health Administration will continue to disseminate reports and publications in accordance with its mission to keep the public and professionals informed of important developments in research, manpower development, and service delivery.

Your comments and suggestions are welcome at any time. Please write:

Office of Communications
Alcohol, Drug Abuse, and Mental
Health Administration
5600 Fishers Lane
Rockville, Md. 20852

DEPARTMENT OF
HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE

ALCOHOL, DRUG ABUSE, AND
MENTAL HEALTH ADMINISTRATION
5600 FISHERS LANE
ROCKVILLE, MARYLAND 20852

OFFICIAL BUSINESS
Penalty for private use, \$300



POSTAGE AND FEES PAID
U.S. DEPARTMENT OF H.E.W.
HEW 389

DHEW Publication No. (ADM) 74-30
Printed 1973

U.S. DEPARTMENT OF HEALTH, EDUCATION, AND WELFARE
PUBLIC HEALTH SERVICE

ALCOHOL, DRUG ABUSE, AND MENTAL HEALTH ADMINISTRATION

